



10051909 Sequence Listing.txt

SEQUENCE LISTING

<110> Helentjaris, Tim
<120> Plant Sugar Transport Proteins
<130> 2119-4263 (BB1163 US CIP)
<140> 10/051,909
<141> 2002-01-17
<160> 56
<170> Microsoft Office 97
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<211> 2824
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<213> Zea mays

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Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile
35 40 45

Val Ala Met Phe Leu Ile Gly Ala Thr Val Ile Thr Thr Ser Pro Gly
50 55 60

Pro Arg Ala Asp Cys Val Gly Arg Arg Pro Met Leu Val Ala Ser Ala
65 70 75 80

Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Ile Val
85 90 95

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Tyr Ile Leu Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu
 100 105 110

Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro His Arg
 115 120 125

Xaa Ser Trp Gly Xaa Xaa Asn Thr Leu Pro Gln Phe Ile Gly Val Xaa
 130 135 140

Gly Gly Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met
 145 150 155 160

Pro Lys Pro Asp Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser
 165 170 175

Leu Xaa Tyr Phe Gly Leu Thr Val Phe Tyr Leu Pro Glu Ser Pro Arg
 180 185 190

Trp Leu Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Xaa Gln
 195 200 205

Arg Leu Arg Gly Arg Glu Asp Val Ser Xaa Glu Xaa Ala Leu Leu Val
 210 215 220

Glu Gly Leu Gly Val Gly Lys Asp Thr Arg Ile Xaa Glu Tyr Ile Ile
 225 230 235 240

Gly Pro Ala Thr Glu Ala Ala Asp Asp Leu Val Thr Asp Gly Asp Lys
 245 250 255

Glu Gln Ile Thr Leu Tyr Gly Pro Glu Glu Gly Gln Ser Trp Ile Ala
 260 265 270

Arg Pro Ser Lys Gly Pro Ile Met Leu Gly Ser Val Leu Ser Leu Ala
 275 280 285

Ser Arg His Gly Ser Met Val Asn Gln Ser Val Pro Leu Met Asp Pro
 290 295 300

Ile Val Thr Leu Phe Gly Ser Val His Glu Asn Met Pro Gln Ala Gly
 305 310 315 320

Gly Ser Met Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser
 325 330 335

Val Thr Asp Gln His Ala Lys Asn Glu Gln Trp Asp Glu Glu Asn Leu
 340 345 350

His Arg Asp Asp Glu Glu Tyr Ala Ser Asp Gly Ala Gly Gly Asp Tyr
 355 360 365

Glu Asp Asn Leu His Ser Pro Leu Leu Ser Arg Gln Ala Thr Gly Ala
 370 375 380

Glu Gly Lys Asp Ile Val His His Gly His Arg Gly Ser Ala Leu Ser
 385 390 395 400

Met Arg Arg Gln Ser Leu Leu Gly Glu Gly Gly Asp Gly Val Ser Ser
 405 410 415

Thr Asp Ile Gly Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Lys
 420 425 430

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Glu Gly Glu Asn Gly Arg Lys Glu Gly Gly Phe Lys Arg Val Tyr Leu
 435 440 445

His Gln Glu Gly Val Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu
 450 455 460

Pro Gly Gly Gly Asp Val Leu Glu Gly Ser Glu Phe Val His Ala Ala
 465 470 475 480

Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys Gly Leu Ala Glu Pro
 485 490 495

Arg Met Ser Asp Ala Ala Met Val His Pro Ser Glu Val Ala Ala Lys
 500 505 510

Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu
 515 520 525

Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe Ala Gly Ile Asn
 530 535 540

Gly Val Leu Tyr Tyr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala
 545 550 555 560

Val Ile Leu Ser Lys Phe Gly Leu Ser Ser Ala Ser Ala Ser Ile Leu
 565 570 575

Ile Ser Ser Leu Thr Thr Leu Leu Met Leu Pro Cys Ile Gly Phe Ala
 580 585 590

Met Leu Leu Met Asp Leu Ser Gly Arg Arg Phe Leu Leu Leu Gly Thr
 595 600 605

Ile Pro Ile Leu Ile Ala Ser Leu Val Ile Leu Val Val Ser Asn Leu
 610 615 620

Ile Asp Leu Gly Thr Leu Ala His Ala Leu Leu Ser Thr Ile Ser Val
 625 630 635 640

Ile Val Tyr Phe Cys Cys Phe Val Met Gly Phe Gly Pro Ile Pro Asn
 645 650 655

Ile Leu Cys Ala Glu Ile Phe Pro Thr Arg Val Arg Gly Leu Cys Ile
 660 665 670

Ala Ile Cys Ala Phe Thr Phe Trp Ile Gly Asp Ile Ile Val Thr Tyr
 675 680 685

Ser Leu Pro Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Ser
 690 695 700

Ile Tyr Ala Val Val Cys Leu Ile Ser Phe Val Phe Val Phe Leu Lys
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Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe
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Ala Val Gly Ala Lys Gln Ala Ala Ala Lys Ala
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 <211> 443
 <212> DNA

10051909 Sequence Listing.txt

<213> Oryza sativa

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<212> PRT

<213> Oryza sativa

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	20				25					30				
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His Leu Gly Val Pro Thr Ser Pro Ser Arg Phe Pro Ala Ala Ser Leu

	35				40					45			
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Leu Val Arg Gly Ser Glu Ile Ser Val Asp Glu Arg Leu Gly Gly Asn

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Xaa Ser Pro Ala Met Ala Gly Ala Val Leu Val Ala Ile Ala Ala Ser

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Ile Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala
 85 90 95

Val Leu Tyr Ile Lys Lys Glu Phe Asn Leu His Ser Asp Pro Leu Ile
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Glu Gly Leu Ile Val Ala Met Ser Leu Ile Gly Ala Thr Ile Ile Thr
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Thr Xaa Ser
 130

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<211> 870

<212> DNA

<213> Oryza sativa

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<211> 131

<212> PRT

<213> Oryza sativa

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Val Leu Thr Leu Ile Leu Val Asn Ile Leu Asp Val Gly Thr Met Val
 1 5 10 15

His Ala Ser Leu Ser Thr Val Ser Val Ile Leu Tyr Phe Cys Phe Phe
 20 25 30

Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe
 35 40 45

Pro Thr Thr Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr Phe
 50 55 60

Trp Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn
 65 70 75 80

Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys Ile
 85 90 95

Leu Ala Phe Leu Phe Val Phe Met Lys Val Pro Glu Thr Lys Gly Met
 100 105 110

Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln Ala
 115 120 125

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Lys Glu Asp
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<212> DNA

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<212> PRT

<213> Glycine max

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Met Lys Gly Ala Val Leu Val Ala Ile Ala Ala Ser Ile Gly Asn Phe
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10051909 Sequence Listing.txt

Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Asn Gly Tyr Ile
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Lys Lys Asp Leu Ala Leu Gly Thr Thr Met Glu Arg Leu Val Val Gly
35 40 45

Met Ser Leu Ile Gly Ala Thr Val Ile Thr Thr Cys Ser Gly Pro Ile
50 55 60

Ala Asp Trp Leu Gly Arg Arg Pro Met Met Ile Ile Ser Ser Val Leu
65 70 75 80

Tyr Phe Leu Gly Gly Leu Val Met Leu Trp Ser Pro Asn Val Tyr Val
85 90 95

Leu Cys Leu Ala Arg Leu Leu Asp Gly Phe Gly Ile Gly Leu Ala Val
100 105 110

Thr Leu Val Pro Val Tyr Ile Ser Glu Thr Ala Pro Ser Glu Ile Arg
115 120 125

Gly Ser Leu Asn Thr Leu Pro Gln Phe Ser Gly Ser Gly Gly Met Phe
130 135 140

Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Ser Pro Ala Pro Ser
145 150 155 160

Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser Leu Leu Tyr Phe
165 170 175

Ala Leu Thr Ile Phe Phe Leu Pro Glu Ser Pro Arg Trp Leu Val Ser
180 185 190

Lys Gly Arg Met Leu Glu Ala Lys Lys Val Leu Gln Arg Leu Arg Gly
195 200 205

Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly Leu Gly
210 215 220

Ile Gly Gly Asp Thr Ser Ile Glu Glu Tyr Ile Ile Gly Pro Ala Asp
225 230 235 240

Asp Val Ala Asp Gly His Glu His Ala Thr Glu Lys Asp Lys Ile Arg
245 250 255

Leu Tyr Gly Ser Gln Ala Gly Leu Ser Trp Leu Ser Lys Pro Val Thr
260 265 270

Gly Gln Ser Ser Ile Gly Leu Ala Ser His His Gly Ser Ile Ile Asn
275 280 285

Gln Ser Met Pro Leu Met Asp Pro Leu Val Thr Leu Phe Gly Ser Ile
290 295 300

His Glu Lys Leu Pro Glu Thr Gly Ala Arg Gly Ser Met Arg Ser Thr
305 310 315 320

Leu Phe Pro Asn Phe Gly Ser Met Phe Ser Thr Ala Glu Pro His Ala
325 330 335

Lys Ile Glu Gln Trp Asp Glu Glu Ser Leu Gln Arg Glu Arg Glu Asp
340 345 350

10051909 Sequence Listing.txt

Tyr Met Ser Asp Ala Thr Arg Gly Asp Ser Asp Asp Asn Leu His Ser
355 360 365

Pro Leu Ile Ser Arg Gln Thr Thr Ser Leu Glu Lys Asp Leu Pro Pro
370 375 380

Pro Pro Ser His Gly Ser Ile Leu Gly Ser Met Arg Arg His Ser Ser
385 390 395 400

Leu Met Gln Gly Ser Gly Glu Gln Gly Gly Ser Thr Gly Ile Gly Gly
405 410 415

Gly Trp Gln Leu Ala Trp Lys Trp Thr Asp Lys Gly Glu Asp Gly Lys
420 425 430

Gln Gln Gly Gly Phe Lys Arg Ile Tyr Leu His Glu Glu Gly Val Ser
435 440 445

Ala Ser Arg Arg Gly Ser Ile Val Ser Ile Pro Gly Glu Gly Glu Phe
450 455 460

Val Gln Ala Ala Ala Leu Val Ser Gln Pro Ala Leu Tyr Ser Lys Glu
465 470 475 480

Leu Ile Asp Gly His Pro Val Gly Pro Ala Met Val His Pro Ser Glu
485 490 495

Thr Ala Ser Lys Gly Pro Ser Trp Lys Ala Leu Leu Glu Pro Gly Val
500 505 510

Lys His Ala Leu Val Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe
515 520 525

Ser Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu Glu
530 535 540

Ala Gly Val Glu Val Leu Leu Ser Asp Ile Gly Ile Gly Ser Glu Ser
545 550 555 560

Ala Ser Phe Leu Ile Ser Ala Phe Thr Thr Phe Leu Met Leu Pro Cys
565 570 575

Ile Gly Val Ala Met Lys Leu Met Asp Val Ser Gly Arg Arg Gln Leu
580 585 590

Leu Leu Thr Thr Ile Pro Val Leu Ile Val Ser Leu Ile Ile Leu Val
595 600 605

Ile Gly Ser Leu Val Asn Phe Gly Asn Val Ala His Ala Ala Ile Ser
610 615 620

Thr Val Cys Val Val Val Tyr Phe Cys Cys Phe Val Met Gly Tyr Gly
625 630 635 640

Pro Ile Pro Asn Ile Leu Cys Ser Glu Ile Phe Pro Thr Arg Val Arg
645 650 655

Gly Leu Cys Ile Ala Ile Cys Ala Leu Val Phe Trp Ile Gly Asp Ile
660 665 670

Ile Ile Thr Tyr Ser Leu Pro Val Met Leu Gly Ser Leu Gly Leu Gly
675 680 685

10051909 Sequence Listing.txt

Gly Val Phe Ala Ile Tyr Ala Val Val Cys Phe Ile Ser Trp Ile Phe
 690 695 700
 Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile
 705 710 715 720
 Ser Glu Phe Phe Ser Val Gly Ala Lys Gln Ala Ala Ser Ala Lys Asn
 725 730 735

Glu

<210> 9
<211> 1692
<212> DNA
<213> Glycine max

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gaagcatggc		aaatccaagc	agtcttagtgg	accctctagt	gaccctctt	ggttagtgtac		180
atgagaagct		cccagaaaaca	ggaagcaccc	ttttccaca	cttgggaggt	atgttcagtg		240
ttgggggaaa		tcagccaaagg	aatgaagatt	gggatgagga	aagcctagcc	agagaggggt		300
atgattatgt		ctctgatgtc	ggtgattctg	atgacaattt	gcagagtcca	ttgatctcac		360
gtcaaacaac		gagttctggat	aaggacatac	cttccatgc	ccatagtaac	tttgcagaca		420
tgaggcaagg		tagttttta	catggaaatt	caggagaacc	cactggtagt	actgggatgt		480
gtgggtggtt		gcagctagca	tggaaatggt	ctgaaaagaga	gggcccagat	gaaaagaagg		540
aagggtggctt		caagagaata	tatttacacc	aagatggtgg	ttctggatct	agacgtgggt		600
ctgtggtttc		actccctggc	ggtgattttac	caactgacag	tgagggtgt	caggctgtcg		660
ctctggtag		tcagccgtcc	cttataatg	aggacccat	gcgtcaacgg	ccagggtggac		720
cagctatgt		tcatccctct	gaaacaattt	caaaaggcc	aagtggaggt	gatctttttt		780
aacctggggt		gaagcatgca	ttgattttgg	gggtgggaaat	gcaaatttctt	cagcagttct		840
ctggtataaa		tgggttcctc	tactatacgc	ctcaaaattct	tgagcaggca	ggtgttggtt		900
atcttcttc		aaggcttaggc	cttggttctt	cttcttcatc	ctttcttatt	agtgcgtgt		960
caaccttgg		gatgtttccct	tgtatagcca	ttgcccattgag	gctcatggat	atttcaggca		1020
gaaggacttt		gctgtctcagt	acaatccccg	tcctaatacg	agctcttc	atatttagtcc		1080
tgggaagtct		tgtggatttg	ggatccactg	caaattgcata	aatctcaacc	attagtgtta		1140
ttgtcttattt		ctgtttcttt	gtcatggat	ttggaccaat	tcctaataata	ctttgtgcag		1200
agatcttccc		cactcgagtt	cgtggctct	gcattgtctat	ttgtggccctt	accttttgg		1260
tctgtgatat		cattgtcacc	tacacactcc	cagtttatgct	caattctgt	ggccctcgct		1320
gtgtttttgg		tatttatgtc	gtcgtgtgt	tcatacgatc	gggtgttgct	ttttgtgaaag		1380
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aacagtttga		cgtatccaaag	cacaactgac	ccaaggacat	gataaatttca	agtttttgac		1500
ggtaccttct		aatttttttc	aatctacggc	tgtttgaat	tttccctct	ttttaaaattt		1560
tattttctat		ttttctcttc	ttttccctgg	gtttagattt	agaaaacaaga	aactttgttt		1620
ctgttaaagaa		aaatgttcat	tttctgggtt	atttatggaa	ctttatatac	tttccctaaaaaa		1680
aaaaaaaaaaa	aa							1692

<210> 10
<211> 486
<212> PRT
<213> Glycine max

<400> 10
Asp Pro Ser Arg Glu 5 Lys Asp Gln Ile 10 Lys Leu Tyr Gly Pro Glu 15 Gln
1 5 10 15

Gly Gln Ser Trp Val Ala Arg Pro Val Ala Gly Pro Asn Ser Val Gly
20 25 30

Leu Val Ser Arg Lys Gly Ser Met Ala Asn Pro Ser Ser 45 Leu Val Asp
35 40 45

10051909 Sequence Listing.txt

Pro Leu Val Thr Leu Phe Gly Ser Val His Glu Lys Leu Pro Glu Thr
50 55 60

Gly Ser Thr Leu Phe Pro His Phe Gly Ser Met Phe Ser Val Gly Gly
65 70 75 80

Asn Gln Pro Arg Asn Glu Asp Trp Asp Glu Glu Ser Leu Ala Arg Glu
85 90 95

Gly Asp Asp Tyr Val Ser Asp Ala Gly Asp Ser Asp Asp Asn Leu Gln
100 105 110

Ser Pro Leu Ile Ser Arg Gln Thr Thr Ser Leu Asp Lys Asp Ile Pro
115 120 125

Pro His Ala His Ser Asn Leu Ala Ser Met Arg Gln Gly Ser Leu Leu
130 135 140

His Gly Asn Ser Gly Glu Pro Thr Gly Ser Thr Gly Ile Gly Gly Gly
145 150 155 160

Trp Gln Leu Ala Trp Lys Trp Ser Glu Arg Glu Gly Pro Asp Gly Lys
165 170 175

Lys Glu Gly Gly Phe Lys Arg Ile Tyr Leu His Gln Asp Gly Gly Ser
180 185 190

Gly Ser Arg Arg Gly Ser Val Val Ser Leu Pro Gly Gly Asp Leu Pro
195 200 205

Thr Asp Ser Glu Val Val Gln Ala Ala Ala Leu Val Ser Gln Pro Ala
210 215 220

Leu Tyr Asn Glu Asp Leu Met Arg Gln Arg Pro Val Gly Pro Ala Met
225 230 235 240

Ile His Pro Ser Glu Thr Ile Ala Lys Gly Pro Ser Trp Ser Asp Leu
245 250 255

Phe Glu Pro Gly Val Lys His Ala Leu Ile Val Gly Val Gly Met Gln
260 265 270

Ile Leu Gln Gln Phe Ser Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro
275 280 285

Gln Ile Leu Glu Gln Ala Gly Val Gly Tyr Leu Leu Ser Ser Leu Gly
290 295 300

Leu Gly Ser Thr Ser Ser Phe Leu Ile Ser Ala Val Thr Thr Leu
305 310 315 320

Leu Met Leu Pro Cys Ile Ala Ile Ala Met Arg Leu Met Asp Ile Ser
325 330 335

Gly Arg Arg Thr Leu Leu Leu Ser Thr Ile Pro Val Leu Ile Ala Ala
340 345 350

Leu Leu Ile Leu Val Leu Gly Ser Leu Val Asp Leu Gly Ser Thr Ala
355 360 365

Asn Ala Ser Ile Ser Thr Ile Ser Val Ile Val Tyr Phe Cys Phe Phe
370 375 380

10051909 Sequence Listing.txt

Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe
385 390 395 400
Pro Thr Arg Val Arg Gly Leu Cys Ile Ala Ile Cys Ala Leu Thr Phe
405 410 415
Trp Ile Cys Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn
420 425 430
Ser Val Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys Phe
435 440 445
Ile Ala Trp Val Phe Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met
450 455 460
Pro Leu Glu Val Ile Ile Glu Phe Phe Ser Val Gly Ala Lys Gln Phe
465 470 475 480
Asp Asp Ala Lys His Asn
485

<210> 11
<211> 510
<212> DNA
<213> *Triticum aestivum*

<220>
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<222> (421)
<223> n = a, c, g or t

<220>
<221> unsure
<222> (434)
<223> n = a, c, g or t

<220>
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<222> (441)
<223> n = a, c, g or t

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<222> (458)
<223> n = a, c, g or t

<220>
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<222> (483)
<223> n = a, c, g or t

<220>
<221> unsure
<222> (493)
<223> n = a, c, g or t

<220>
<221> unsure
<222> (498)
<223> n = a, c, g or t

<400> 11

10051909 Sequence Listing.txt

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ctcggttctg	atctaccgca	ccacaccacc	acaccacacc	aggggcctgc	cgcttcttgg	120
gcttctccat	ctcatctcct	tggttggttc	tctactagag	aggcgagct	gcagggatcc	180
ttggtggaga	ggagggaaaga	agatgtcgaa	tgctgcactg	gtcgcgattg	cggcttccat	240
tggcaatctg	ctgcaggggt	gggacaatgc	caccatcgct	ggtgctgttc	tgtacatcaa	300
gaaggaattc	cagctcgaaa	ataatccgac	tgtggagggg	ctcatcgtgg	catgtccctca	360
tcgggtgcaa	catcatcaca	catttccgg	gccagtatca	aactgggtt	ccgggccccta	420
ngccatctcc	ttgnnttcaa	ntcccaaggg	ctaatacanc	aggcaccaat	gtcaatgtgc	480
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<210> 12
<211> 117
<212> PRT
<213> Triticum aestivum

<400> 12	Gly	Gly	Ser	Arg	Gly	Ser	Glu	Gly	Gly	Val	Ala	Leu	Gly	Ser	Tyr	Leu
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Arg	Arg	Leu	Arg	Ser	Val	Leu	Ile	Tyr	Arg	Thr	Thr	Pro	Pro	His	His
20															

Thr	Arg	Gly	Leu	Pro	Leu	Leu	Gly	Leu	Leu	His	Leu	Ile	Ser	Leu	Val
35															

Gly	Ser	Leu	Leu	Glu	Arg	Arg	Ser	Cys	Arg	Asp	Pro	Trp	Trp	Arg	Gly
50															

Gly	Lys	Lys	Met	Ser	Gly	Ala	Ala	Leu	Val	Ala	Ile	Ala	Ala	Ser	Ile
65															

Gly	Asn	Leu	Leu	Gln	Gly	Trp	Asp	Asn	Ala	Thr	Ile	Ala	Gly	Ala	Val
85															

Leu	Tyr	Ile	Lys	Lys	Glu	Phe	Gln	Leu	Glu	Asn	Asn	Pro	Thr	Val	Glu
100															

Gly	Leu	Ile	Val	Ala
115				

<210> 13
<211> 1487
<212> DNA
<213> Triticum aestivum

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	tcgcatggaa	atggtcggag	cgacaaggcg	aggatggcaa	gaaggaagga	ggcttcaaaa	120
	gaatctactt	gcaccaagag	gggggtggccg	actcaagaag	gggcctctgtt	gtttcaccc	180
	ctgggtgggg	tgatgccacg	caagggggca	gtgggtttat	acatgctgt	gctttggtaa	240
	gccactcggc	tctttactcc	aaggatctta	tggaagagcg	tatggcggcc	gttccagcc	300
	tgattccatcc	atggaggcg	gctcccaaag	gttcaatctg	gaaagatctg	tttgaacctg	360
	gtgtgaggcg	tgcattgttc	gtcggtgtt	gaattcagat	gcttcagcag	tttgctggaa	420
	taaatggagt	tctctactat	actcctcaaa	ttctggagca	agctgggttg	gctgttcttc	480
	tttccaaatct	tggcctcagt	tcagcatcag	catccatctt	gatcgttct	ctcaccaccc	540
	tactcatgt	cccaagcatt	ggtgttagcca	tgagacttat	ggatataatct	ggaagaaggt	600
	ttctgtact	gggcacaatt	cccatcttga	tagcatccct	aatttttttg	ggtgtggtca	660
	atgttatcaa	cttgagtagc	gtgcccacg	ctgtgctctc	cacagtttagc	gtcattgtct	720
	acttctgctg	cttgtcatg	ggcttggcc	cgatccccaa	cattctatgt	gcagagattt	780
	tccccaccag	agtccgtgg	gtctgcacatcg	ctatttgcgc	cctcacattc	tggatgttg	840
	acattattgt	tacctacagc	ctgcctgtga	tgctgaatgc	tattggtcta	gcgggtgtct	900
	ttggtatata	tgcagtgcgtt	tgctgcattt	cctttgtgtt	cgtctaccta	aaggcccag	960
	agacaaaggg	catgcccctc	gaggtcatca	ccgagttctt	tgcgggttggg	gcgaagcaag	1020

10051909 Sequence Listing.txt

cgcaggccac cattgcctga ttcatcatgg agctttgtt tcagtttgc aactgcggc 1080
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 aaatgagaca gctacccaaa gagctcatca cgaggaacgg gaagctgtaa aagttaggagg 1200
 atctcatgcc cccatttcat cgtctattat tgcttattag tactgtactg taatcgcat 1260
 tagttgctgt agggttgttc aacttgctaa tctgattctg aactaccatg ctgatgtccg 1320
 aaataaagaa aaagcatgtt ttttttgtg tcaacttgca aactttctt taaacattgt 1380
 gcaatgtatt gtaaatttct ttatcaactt ccctcgattc agagagaagc acttgggtt 1440
 aagtcatgaa agattttct cgacaa 1487

<210> 14
 <211> 345
 <212> PRT
 <213> *Triticum aestivum*

<400> 14
 Ser Trp Lys Glu Gly Gly Glu Ala Val Ser Ser Thr Gly Ile Gly Gly
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 Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Arg Gln Gly Glu Asp Gly
 20 25 30
 Lys Lys Glu Gly Gly Phe Lys Arg Ile Tyr Leu His Gln Glu Gly Val
 35 40 45
 Ala Asp Ser Arg Arg Gly Ser Val Val Ser Leu Pro Gly Gly Asp
 50 55 60
 Ala Thr Gln Gly Gly Ser Gly Phe Ile His Ala Ala Ala Leu Val Ser
 65 70 75 80
 His Ser Ala Leu Tyr Ser Lys Asp Leu Met Glu Glu Arg Met Ala Ala
 85 90 95
 Gly Pro Ala Met Ile His Pro Leu Glu Ala Ala Pro Lys Gly Ser Ile
 100 105 110
 Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu Phe Val Gly
 115 120 125
 Val Gly Ile Gln Met Leu Gln Gln Phe Ala Gly Ile Asn Gly Val Leu
 130 135 140
 Tyr Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala Val Leu Leu
 145 150 155 160
 Ser Asn Leu Gly Leu Ser Ser Ala Ser Ala Ser Ile Leu Ile Ser Ser
 165 170 175
 Leu Thr Thr Leu Leu Met Leu Pro Ser Ile Gly Val Ala Met Arg Leu
 180 185 190
 Met Asp Ile Ser Gly Arg Arg Phe Leu Leu Leu Gly Thr Ile Pro Ile
 195 200 205
 Leu Ile Ala Ser Leu Ile Val Leu Gly Val Val Asn Val Ile Asn Leu
 210 215 220
 Ser Thr Val Pro His Ala Val Leu Ser Thr Val Ser Val Ile Val Tyr
 225 230 235 240
 Phe Cys Cys Phe Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys
 245 250 255

10051909 Sequence Listing.txt

Ala Glu Ile Phe Pro Thr Arg Val Arg Gly Val Cys Ile Ala Ile Cys
 260 265 270

Ala Leu Thr Phe Trp Ile Cys Asp Ile Ile Val Thr Tyr Ser Leu Pro
 275 280 285

Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala
 290 295 300

Val Val Cys Cys Ile Ala Phe Val Phe Val Tyr Leu Lys Val Pro Glu
 305 310 315 320

Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ala Val Gly
 325 330 335

Ala Lys Gln Ala Gln Ala Thr Ile Ala
 340 345

<210> 15

<211> 1009

<212> DNA

<213> *Triticum aestivum*

<400> 15

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 gggttctcta tcaaacattt gactaagctc ttccctcagca tctattctta ttagtgcctt 180
 gacaaccttg ctgatgcttc ccagcattgg catcgccatg agactcatgg atatgtcagg 240
 aagaaggttt cttctccctt caacaatccc tgcgttgcata gtagcgttag ctgtcttgg 300
 ttttagtgaat gttctggatg tcggaaccat ggtgcacgct ggcgtctcaa cgatcagcgt 360
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 ggagattttc cccacctctg tccgtggcat ctgcatacgcc atctgcgcgc taaccttctg 480
 gatcggcgcac atcatcgatgata catacactct ccccgatgtg ctcaatgcca ttggtctcgc 540
 tggagtcttc ggcataatatg ccacatgtttg tgcgttgcata tttgttattcg tctacatgaa 600
 ggtccctgag acaaaggccca tgcccctgga ggtcatcacc gagttcttct ctgtcggggc 660
 aaagcaggcc aaggaagccca cggacttagtt gctctgatcc ggtgatccgc gtcgctgtg 720
 gtaattttgt ggtgtatcaa ctactactac actggtaac ctgcgtatgt ttggtgaaga 780
 aacttcaaag agagcagatc cggaaagactt tacatcgatgata ggctgaatttgc tgcgtcgta 840
 ggccggcttc tggaaagttagt atatgtactt agatcatcgatc ctctttcgcc tttggaaactt 900
 tctatattgtt tatttcgatcaa ttcttgcctt atgtacttag tgctgttatac acaattttatg 960
 tcgattatgtt gtttgcctaa aaaaaaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa 1009

<210> 16

<211> 228

<212> PRT

<213> *Triticum aestivum*

<400> 16

Glu Pro Gly Val Lys His Ala Leu Phe Val Gly Ile Gly Leu Gln Ile
 1 5 10 15

Leu Gln Gln Phe Ala Gly Ile Asn Gly Val Leu Tyr Tyr Pro Gln
 20 25 30

Ile Leu Glu Gln Ala Gly Val Gly Val Leu Leu Ser Asn Ile Gly Leu
 35 40 45

Ser Ser Ser Ser Ala Ser Ile Leu Ile Ser Ala Leu Thr Thr Leu Leu
 50 55 60

Met Leu Pro Ser Ile Gly Ile Ala Met Arg Leu Met Asp Met Ser Gly
 65 70 75 80

10051909 Sequence Listing.txt

Arg Arg Phe Leu Leu Leu Ser Thr Ile Pro Val Leu Ile Val Ala Leu
 85 90 95

Ala Val Leu Val Leu Val Asn Val Leu Asp Val Gly Thr Met Val His
 100 105 110

Ala Ala Leu Ser Thr Ile Ser Val Ile Val Tyr Phe Cys Phe Phe Val
 115 120 125

Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe Pro
 130 135 140

Thr Ser Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr Phe Trp
 145 150 155 160

Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn Ala
 165 170 175

Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Ile Val Cys Val Leu
 180 185 190

Ala Phe Val Phe Val Tyr Met Lys Val Pro Glu Thr Lys Gly Met Pro
 195 200 205

Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln Gly Lys
 210 215 220

Glu Ala Thr Asp
 225

<210> 17
 <211> 615
 <212> DNA
 <213> Zea mays

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<220>
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 <222> (271)
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 <222> (357)
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 <222> (476)

10051909 Sequence Listing.txt

<223> n = a, c, g or t

<220>
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 <222> (599)
 <223> n = a, c, g or t

<220>
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 <222> (602)
 <223> n = a, c, g or t

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 aggcaacgtc aagttcgctt tcgcctgcnc catcctcgcc tcaatgaccc ctatccttct 180
 cggctatgtat atcggagtgtat tgagcggcgcc gtcgttgcac atcaagaagg acctgaaaat 240
 cagcgaacgtg aagctggaga tcctgtatggg natcctcaac gtgtactcgc tcatcggctc 300
 gttngcggca gggcggacgt ccgactggat cggncgcccgt acaccatcgat gttcgcngcg 360
 gtgatcttct tcgcggggcgc ttcctcatgg gcttcgcgcgt gaactactgg atgctcatgt 420
 tcgggcgcctt cgtggccggg atcggcgatgg gctacgcgcgt catgatcgca accgtntaca 480
 cggccgaagt gtcccccgcatt cggcccgccgg cttcctgacg tcgttcccgaggggtttcat 540
 cacttcggca tcctcttaggt acgtgtcaat aaggcttttc cgcttccgtt cgctggatng 600
 cnctaattgtc ggcatt 615

<210> 18
 <211> 167
 <212> PRT
 <213> Zea mays

<220>
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 <222> (34)
 <223> Xaa = any amino acid

<220>
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 <222> (85)
 <223> Xaa = any amino acid

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 Ala Ala Ile Glu Pro Gly Lys Lys Gly Asn Val Lys Phe Ala Phe Ala
 20 25 30
 Cys Xaa Ile Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp Ile

10051909 Sequence Listing.txt

35

40

45

Gly Val Met Ser Gly Ala Ser Leu Tyr Ile Lys Lys Asp Leu Lys Ile
 50 55 60

Ser Asp Val Lys Leu Glu Ile Leu Met Gly Ile Leu Asn Val Tyr Ser
 65 70 75 80

Leu Ile Gly Ser Xaa Ala Ala Gly Arg Thr Ser Asp Trp Ile Gly Arg
 85 90 95

Arg Xaa Thr Ile Val Phe Ala Ala Val Ile Phe Phe Ala Gly Ala Xaa
 100 105 110

Leu Met Gly Phe Ala Val Asn Tyr Trp Met Leu Met Phe Gly Arg Phe
 115 120 125

Val Ala Gly Ile Gly Val Gly Tyr Ala Leu Met Ile Ala Thr Val Tyr
 130 135 140

Thr Ala Glu Val Ser Pro Xaa Ser Ala Arg Gly Phe Leu Thr Ser Phe
 145 150 155 160

Pro Glu Val Phe Ile Thr Ser
 165

<210> 19

<211> 1914

<212> DNA

<213> Zea mays

<400> 19

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1914

<210> 20
<211> 513
<212> PRT
<213> Zea mays

<400> 20
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Asn Val Lys Tyr Ala Ser Ile Cys Ala Ile Leu Ala Ser Met Ala Ser
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Val Ile Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ala Met Tyr
35 40 45
Ile Lys Lys Asp Leu Asn Ile Thr Asp Val Gln Leu Glu Ile Leu Ile
50 55 60
Gly Ile Leu Ser Leu Tyr Ser Leu Phe Gly Ser Phe Ala Gly Ala Arg
65 70 75 80
Thr Ser Asp Arg Ile Gly Arg Arg Leu Thr Val Val Phe Ala Ala Val
85 90 95
Ile Phe Phe Val Gly Ser Leu Leu Met Gly Phe Ala Val Asn Tyr Gly
100 105 110
Met Leu Met Ala Gly Arg Phe Val Ala Gly Val Gly Val Gly Tyr Gly
115 120 125
Gly Met Ile Ala Pro Val Tyr Thr Ala Glu Ile Ser Pro Ala Ala Ser
130 135 140
Arg Gly Phe Leu Thr Thr Phe Pro Glu Val Phe Ile Asn Ile Gly Ile
145 150 155 160
Leu Leu Gly Tyr Leu Ser Asn Phe Ala Phe Ala Arg Leu Pro Leu His
165 170 175
Leu Gly Trp Arg Val Met Leu Ala Ile Gly Ala Val Pro Ser Gly Leu
180 185 190
Leu Ala Leu Leu Val Phe Cys Met Pro Glu Ser Pro Arg Trp Leu Val
195 200 205
Leu Lys Gly Arg Leu Ala Asp Ala Arg Ala Val Leu Glu Lys Thr Ser
210 215 220
Ala Thr Pro Glu Glu Ala Ala Glu Arg Leu Ala Asp Ile Lys Ala Ala
225 230 235 240
Ala Gly Ile Pro Lys Gly Leu Asp Gly Asp Val Val Thr Val Pro Gly
245 250 255
Lys Glu Gln Gly Gly Glu Leu Gln Val Trp Lys Lys Leu Ile Leu
260 265 270
Ser Pro Thr Pro Ala Val Arg Arg Ile Leu Leu Ser Ala Val Gly Leu
275 280 285
His Phe Phe Gln Gln Ala Ser Gly Ser Asp Ser Val Val Gln Tyr Ser

10051909 Sequence Listing.txt

290

295

300

Ala Arg Leu Phe Lys Ser Ala Gly Ile Thr Asp Asp Asn Lys Leu Leu
 305 310 315 320

Gly Val Thr Cys Ala Val Gly Val Thr Lys Thr Phe Phe Ile Leu Val
 325 330 335

Ala Thr Phe Leu Leu Asp Arg Ala Gly Arg Arg Pro Leu Leu Leu Ile
 340 345 350

Ser Thr Gly Gly Met Ile Val Ser Leu Ile Cys Leu Gly Ser Gly Leu
 355 360 365

Thr Val Ala Gly His His Pro Asp Thr Lys Val Ala Trp Ala Val Ala
 370 375 380

Leu Cys Ile Ala Ser Thr Leu Ser Tyr Ile Ala Phe Phe Ser Ile Gly
 385 390 395 400

Leu Gly Pro Ile Thr Gly Val Tyr Thr Ser Glu Ile Phe Pro Leu Gln
 405 410 415

Val Arg Ala Leu Gly Phe Ala Val Gly Val Ala Ser Asn Arg Val Thr
 420 425 430

Ser Ala Val Ile Ser Met Thr Phe Leu Ser Leu Ser Lys Ala Ile Thr
 435 440 445

Ile Gly Gly Ser Phe Phe Leu Tyr Ser Gly Ile Ala Ala Val Ala Trp
 450 455 460

Val Phe Phe Phe Thr Cys Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu
 465 470 475 480

Glu Met Gly Lys Leu Phe Gly Met Pro Asp Thr Gly Met Ala Glu Glu
 485 490 495

Ala Glu Asp Ala Ala Ala Lys Glu Lys Val Val Glu Leu Pro Ser Ser
 500 505 510

Lys

<210> 21
 <211> 2017
 <212> DNA
 <213> Oryza sativa

<400> 21
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 ccgtcgcgcc gaagaagaag ggcaacgtcc gtttcgcctt cgcctgcgcc atcctcgccct 180
 ccatgaccc tcatcctcctc ggctacgata tcgggggtat gagccccggc tcgctgtaca 240
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 tcatgatcgcc gccgggtgtac accggccgagg tgcggccggc gtcggcgcgt ggcttcctga 540
 cgtcgttccc ggaggtgttc atcaacttcg gcatcctgt cgggtacgtc tcgaactatg 600
 ctttctcccg cttggcgctg aacctcggtt ggcgcacatc gctcggcgtc ggcgcggcgc 660
 cgtccgtctc gtcgcgcctc atgggtctcg gcatgccgga gtcggccggg tggctggtca 720
 tgaaggacg cctcgcggac gccaagggtgg tgctggagaa gacctccgac acggcggagg 780

10051909 Sequence Listing.txt

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 tcatccgtc cccgaccccg gccatgcggc gcatccctgct gtccgggatc ggcatccact 960
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 gcgatgaaga ataccagtat gtagcaaggc tgaggttggtg ttagtactt agaagtgtca 1920
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2017

<210> 22
 <211> 510
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (102)
 <223> Xaa = any amino acid

<400> 22
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Asn Val Arg Phe Ala Phe Ala Cys Ala Ile Leu Ala Ser Met Thr Ser
 20 25 30

Ile Leu Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ser Leu Tyr
 35 40 45

Ile Lys Lys Asp Phe Asn Ile Ser Asp Gly Lys Val Glu Val Leu Met
 50 55 60

Gly Ile Leu Asn Leu Tyr Ser Leu Ile Gly Ser Phe Ala Ala Gly Arg
 65 70 75 80

Thr Ser Asp Trp Ile Gly Arg Arg Tyr Thr Ile Val Phe Ala Ala Val
 85 90 95

Ile Phe Phe Ala Gly Xaa Phe Leu Met Gly Phe Ala Val Asn Tyr Ala
 100 105 110

Met Leu Met Phe Gly Arg Phe Val Ala Gly Ile Gly Val Gly Tyr Ala
 115 120 125

Leu Met Ile Ala Pro Val Tyr Thr Ala Glu Val Ser Pro Ala Ser Ala
 130 135 140

Arg Gly Phe Leu Thr Ser Phe Pro Glu Val Phe Ile Asn Phe Gly Ile
 145 150 155 160

10051909 Sequence Listing.txt

Leu Leu Gly Tyr Val Ser Asn Tyr Ala Phe Ser Arg Leu Pro Leu Asn
 165 170 175
 Leu Gly Trp Arg Ile Met Leu Gly Ile Gly Ala Ala Pro Ser Val Leu
 180 185 190
 Leu Ala Leu Met Val Leu Gly Met Pro Glu Ser Pro Arg Trp Leu Val
 195 200 205
 Met Lys Gly Arg Leu Ala Asp Ala Lys Val Val Leu Glu Lys Thr Ser
 210 215 220
 Asp Thr Ala Glu Glu Ala Ala Glu Arg Leu Ala Asp Ile Lys Ala Ala
 225 230 235 240
 Ala Gly Ile Pro Glu Glu Leu Asp Gly Asp Val Val Thr Val Pro Lys
 245 250 255
 Arg Gly Ser Gly Asn Glu Lys Arg Val Trp Lys Glu Leu Ile Leu Ser
 260 265 270
 Pro Thr Pro Ala Met Arg Arg Ile Leu Leu Ser Gly Ile Gly Ile His
 275 280 285
 Phe Phe Gln His Ala Leu Gly Ile His Ser Val Val Phe Tyr Ser Pro
 290 295 300
 Leu Val Phe Lys Ser Pro Gly Leu Thr Asn Asp Lys His Phe Leu Gly
 305 310 315 320
 Thr Thr Trp Pro Phe Gly Val Thr Lys Arg Leu Phe Ile Leu Leu Ala
 325 330 335
 Thr Phe Phe Ile Asp Gly Val Gly Arg Arg Pro Leu Leu Leu Gly Ser
 340 345 350
 Thr Gly Gly Ile Ile Leu Ser Leu Ile Gly Leu Gly Ala Gly Leu Thr
 355 360 365
 Val Val Gly Gln His Pro Asp Ala Lys Ile Pro Trp Ala Ile Gly Leu
 370 375 380
 Ser Ile Ala Ser Thr Leu Ala Tyr Val Ala Phe Phe Ser Ile Gly Leu
 385 390 395 400
 Gly Pro Ile Thr Trp Val Tyr Ser Ser Glu Ile Phe Pro Leu Gln Val
 405 410 415
 Arg Ala Leu Gly Cys Ser Leu Gly Val Ala Ala Asn Arg Val Thr Ser
 420 425 430
 Gly Val Ile Ser Met Thr Phe Leu Ser Leu Ser Lys Ala Ile Thr Ile
 435 440 445
 Gly Gly Ser Phe Phe Leu Tyr Ser Gly Ile Ala Ala Leu Ala Trp Val
 450 455 460
 Phe Phe Tyr Thr Tyr Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu Glu
 465 470 475 480
 Met Ser Lys Leu Phe Gly Asp Thr Ala Ala Ala Ser Glu Ser Asp Glu
 485 490 495

10051909 Sequence Listing.txt

Pro Ala Lys Glu Lys Lys Val Glu Met Ala Ala Thr Asn
 500 505 510

<210> 23
 <211> 1853
 <212> DNA
 <213> Glycine max

<400> 23
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 attttccttt ctgcggatatt tcagctaatt aaactaagtc actaagatga ctgagggaaa 180
 gctagttgaa gctgcagaag ctcataagac acttcaggat ttcgatcctc caaagaagcg 240
 caaaaaggAAC aagtatgctt ttgcttgtc tatgctggcc tccatgactt ccatcttgct 300
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 caccatcttc ttgtcggag cacttctcat gggtttctcc cccaattatt ctttctctcat 540
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 aatgagttt gggacatcca gtaatagtga agtaatttc tgatttttt tttgtttttt 1800
 actttttttaga ctagttcttc aaatcaaaac gagaagttaa agtggaaaaaaa aaa 1853

<210> 24
 <211> 523
 <212> PRT
 <213> Glycine max

<400> 24
 Met Thr Glu Gly Lys Leu Val Glu Ala Ala Glu Ala His Lys Thr Leu
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Gln Asp Phe Asp Pro Pro Lys Lys Arg Lys Arg Asn Lys Tyr Ala Phe
 20 25 30

Ala Cys Ala Met Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp
 35 40 45

Ile Gly Val Met Ser Gly Ala Ala Ile Tyr Ile Lys Arg Asp Leu Lys
 50 55 60

Val Ser Asp Glu Gln Ile Glu Ile Leu Leu Gly Ile Ile Asn Leu Tyr
 65 70 75 80

Ser Leu Ile Gly Ser Cys Leu Ala Gly Arg Thr Ser Asp Trp Ile Gly

10051909 Sequence Listing.txt

85

90

95

Pro Arg Tyr Thr Ile Val Phe Ala Gly Thr Ile Phe Phe Val Gly Ala
 100 105 110
 Leu Leu Met Gly Phe Ser Pro Asn Tyr Ser Phe Leu Met Phe Gly Arg
 115 120 125
 Phe Val Ala Gly Ile Gly Ile Gly Tyr Ala Leu Met Ile Ala Pro Val
 130 135 140
 Tyr Thr Ala Glu Val Ser Pro Ala Ser Ser Arg Gly Phe Leu Thr Ser
 145 150 155 160
 Phe Pro Glu Val Phe Ile Asn Gly Gly Ile Leu Ile Gly Tyr Ile Ser
 165 170 175
 Asn Tyr Ala Phe Ser Lys Leu Thr Leu Lys Val Gly Trp Arg Met Met
 180 185 190
 Leu Gly Val Gly Ala Ile Pro Ser Val Leu Leu Thr Val Gly Val Leu
 195 200 205
 Ala Met Pro Glu Ser Pro Arg Trp Leu Val Met Arg Gly Arg Leu Gly
 210 215 220
 Glu Ala Arg Lys Val Leu Asn Lys Thr Ser Asp Ser Lys Glu Glu Ala
 225 230 235 240
 Gln Leu Arg Leu Ala Glu Ile Lys Gln Ala Ala Gly Ile Pro Glu Ser
 245 250 255
 Cys Asn Asp Asp Val Val Gln Val Asn Lys Gln Ser Asn Gly Glu Gly
 260 265 270
 Val Trp Lys Glu Leu Phe Leu Tyr Pro Thr Pro Ala Ile Arg His Ile
 275 280 285
 Val Ile Ala Ala Leu Gly Ile His Phe Phe Gln Gln Ala Ser Gly Val
 290 295 300
 Asp Ala Val Val Leu Tyr Ser Pro Arg Ile Phe Glu Lys Ala Gly Ile
 305 310 315 320
 Thr Asn Asp Thr His Lys Leu Leu Ala Thr Val Ala Val Gly Phe Val
 325 330 335
 Lys Thr Val Phe Ile Leu Ala Ala Thr Phe Thr Leu Asp Arg Val Gly
 340 345 350
 Arg Arg Pro Leu Leu Leu Ser Ser Val Gly Gly Met Val Leu Ser Leu
 355 360 365
 Leu Thr Leu Ala Ile Ser Leu Thr Val Ile Asp His Ser Glu Arg Lys
 370 375 380
 Leu Met Trp Ala Val Gly Ser Ser Ile Ala Met Val Leu Ala Tyr Val
 385 390 395 400
 Ala Thr Phe Ser Ile Gly Ala Gly Pro Ile Thr Trp Val Tyr Ser Ser
 405 410 415
 Glu Ile Phe Pro Leu Arg Leu Arg Ala Gln Gly Ala Ala Ala Gly Val

10051909 Sequence Listing.txt

420

425

430

Ala Val Asn Arg Thr Thr Ser Ala Val Val Ser Met Thr Phe Leu Ser
 435 440 445

Leu Thr Arg Ala Ile Thr Ile Gly Gly Ala Phe Phe Leu Tyr Cys Gly
 450 455 460

Ile Ala Thr Val Gly Trp Ile Phe Phe Tyr Thr Val Leu Pro Glu Thr
 465 470 475 480

Arg Gly Lys Thr Leu Glu Asp Met Glu Gly Ser Phe Gly Thr Phe Arg
 485 490 495

Ser Lys Ser Asn Ala Ser Lys Ala Val Glu Asn Glu Asn Gly Gln Val
 500 505 510

Ala Gln Val Gln Leu Gly Thr Asn Val Gln Thr
 515 520

<210> 25

<211> 2089

<212> DNA

<213> Triticum aestivum

<400> 25

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gggcaacgtg	agggtcgcct	tcgcctgcgc	catcctcgcc	tccatgacct	ccatcctcct	180
cggctacgac	atcggcgtga	tgagcggagc	gtcgctgtac	atccagaagg	atctgaagat	240
caacgacacc	cagctggagg	tcctcatggg	catcctcaac	gtgtactcgc	tcattggctc	300
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gaggactcta	cctgcccgtc	gagttagtca	agcgagccac	ggaaaatgtg	taagaaaaaa	2040
atattaagta	tgtgtattgt	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa		2089

<210> 26

10051909 Sequence Listing.txt

<211> 539

<212> PRT

<213> Triticum aestivum

<400> 26

Ala Pro Leu Asn Tyr Thr Gln Gly Gly Pro Arg Arg His Asn Pro Gln
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20 25 30Ala Ala Val Glu Pro Lys Lys Gly Asn Val Arg Phe Ala Phe Ala
35 40 45Cys Ala Ile Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp Ile
50 55 60Gly Val Met Ser Gly Ala Ser Leu Tyr Ile Gln Lys Asp Leu Lys Ile
65 70 75 80Asn Asp Thr Gln Leu Glu Val Leu Met Gly Ile Leu Asn Val Tyr Ser
85 90 95Leu Ile Gly Ser Phe Ala Ala Gly Arg Thr Ser Asp Trp Ile Gly Arg
100 105 110Arg Phe Thr Ile Val Phe Ala Ala Val Ile Phe Phe Ala Gly Ala Leu
115 120 125Ile Met Gly Phe Ser Val Asn Tyr Ala Met Leu Met Phe Gly Arg Phe
130 135 140Val Ala Gly Ile Gly Val Gly Tyr Ala Leu Met Ile Ala Pro Val Asn
145 150 155 160Thr Gly Glu Val Ser Pro Ala Ser Ala Arg Gly Val Leu Thr Ser Phe
165 170 175Pro Glu Val Phe Ile Asn Phe Gly Ile Leu Leu Gly Tyr Val Ser Asn
180 185 190Phe Ala Phe Ala Arg Leu Ser Leu Arg Leu Gly Trp Arg Ile Met Leu
195 200 205Gly Ile Gly Ala Val Pro Ser Val Leu Leu Ala Phe Met Val Leu Gly
210 215 220Met Pro Glu Ser Pro Arg Trp Leu Val Met Lys Gly Arg Leu Ala Asp
225 230 235 240Ala Lys Val Val Leu Ala Lys Thr Ser Asp Thr Pro Glu Glu Ala Ala
245 250 255Glu Arg Ile Ala Asp Ile Lys Thr Ala Ala Gly Ile Pro Leu Gly Leu
260 265 270Asp Gly Asp Val Val Pro Val Pro Lys Asn Lys Gly Ser Ser Glu Glu
275 280 285Lys Arg Val Leu Lys Asp Leu Ile Leu Ser Pro Thr Ile Ala Met Arg
290 295 300

His Ile Leu Ile Ala Gly Ile Gly Ile His Phe Phe Gln Gln Ser Ser

10051909 Sequence Listing.txt

305	310	315	320
Gly Ile Asp Ala Val Val Leu Tyr Ser Pro Leu Val Phe Lys Ser Ala			
325	330	335	
Gly Ile Thr Gly Asp Ser Arg Leu Arg Gly Thr Thr Val Ala Val Gly			
340	345	350	
Ala Thr Asn Thr Val Phe Ile Leu Val Ala Thr Phe Leu Leu Asp Arg			
355	360	365	
Ile Arg Arg Arg Pro Leu Val Leu Thr Ser Thr Gly Gly Met Leu Val			
370	375	380	
Ser Leu Val Gly Leu Ala Thr Gly Leu Thr Val Ile Ser Arg His Pro			
385	390	395	400
Asp Glu Lys Ile Thr Trp Ala Ile Val Leu Cys Ile Phe Cys Ile Met			
405	410	415	
Ala Tyr Val Ala Phe Phe Ser Ile Gly Leu Gly Pro Ile Thr Trp Val			
420	425	430	
Tyr Ser Ser Glu Ile Phe Pro Leu His Val Arg Ala Leu Gly Cys Ser			
435	440	445	
Leu Gly Val Ala Val Asn Arg Leu Thr Ser Gly Val Ile Ser Met Thr			
450	455	460	
Phe Ile Ser Leu Ser Lys Ala Met Thr Ile Gly Gly Ala Phe Phe Leu			
465	470	475	480
Phe Ala Gly Ile Ala Ser Phe Ala Trp Val Phe Phe Phe Ala Tyr Leu			
485	490	495	
Pro Glu Thr Arg Gly Arg Thr Leu Glu Asp Met Ser Ser Leu Phe Gly			
500	505	510	
Asn Thr Ala Thr His Lys Gln Gly Ala Ala Glu Ala Asp Asp Asp Ala			
515	520	525	
Gly Glu Lys Lys Val Glu Met Ala Ala Thr Asn			
530	535		

<210> 27

<211> 1872

<212> DNA

<213> Triticum aestivum

<400> 27

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ggcttctgct ggcgtccgg agccgggggc agtccatcca aggaacaagg gcaatttcaa	180
gtacggcttc acatgcgccc tctgtgtttc catggccacc atcgtcctcg gctacgacgt	240
tggggtgatg agcggtgcgat cgctgtatcat caagaggac ctgcagatca cggacgtgca	300
gctggagatc atgatggca tcctgagcgt gtacgctc atcgggtctt tcctcgccgc	360
gaggacgtcc gactgggtcg gccgcgcgt caccgtcgtc ttccggccg ccatcttcaa	420
caacggctcc ttgtctatgg gcttcgcgtt caactacgcc atgctcatgg tcgggcgtt	480
cgtcaccggc atccggcgtgg gctacgccc catggtcgcg ccagtgtaca cggccggaggt	540
gtccccggcg tcggcccgcc gcttcttcac gtcttcacc gaggtgttca tcaatgtggg	600
catccctcctt ggctacgtct ccaactacgc cttcgcgcgc ctccgcgtcc acctcagctg	660
gcccgtcatg ctcggcatcg gcggccgtccc gtccgcctcg cttgcgtca tgggtttcg	720
catgccggag tccctcgct ggctcgtcat gaaaggccgc ctcgcggacg ccaggccgt	780

10051909 Sequence Listing.txt

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cggccaggag	aagcaggtgt	ggaaggagct	catctttcg	ccgaccccag	ccatgcggcg	960
catactgctc	gcggcgctcg	gcatccattt	ctttcagcag	gcgacgggct	ccgactccgt	1020
cgtgctctat	agcccacgcg	tgttccagag	cgccggcatc	accggcgaca	accacctgct	1080
cggcgcacaca	tgcgccatgg	gggtcatgaa	gacgctctc	atcctgggtgg	ccacgttcca	1140
gctcgaccgc	gtcggcaggc	ggccgctgtc	gctgaccagc	acggccggca	tgctcgctg	1200
tctcatcgcc	ctcgggacgg	gcctcaccgt	cgtgggtcgg	caccggacg	ccaagggtcc	1260
gtggggccatc	ggcctgtgca	tcgtgtccat	cttggcctac	gtgtgttct	tctccatcg	1320
cctcgccggcc	ctcaccagcg	tgtacaccctc	ggaggtcttc	ccactgcggg	tgccgcgcgt	1380
gggcttcgcg	ctgggcacgt	catgcaaccg	cgtcaccagc	gccgcggct	ccatgtcctt	1440
cctgtccttg	tccaaggcca	tcaccatcgg	cggcagcttc	ttcctgtacg	ccggcattcg	1500
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ggagataggg	aagttttcg	gcatgacgga	cacggccgtc	gaagcccaag	acaccgcac	1620
gaaagacaag	gcaaagtag	gggagatgaa	ctagttagct	agacgtcaac	caactgttac	1680
cgatgtacta	ccatagagat	gtatctgatc	aacgtggcaa	tataagtgtc	acggactctt	1740
ggtgctcatt	gatggattgt	ttggataaaa	tttcaagaga	attgtttcaa	gtttggatcc	1800
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aaaaaaaaaa	aa					1872

<210> 28

<211> 529

<212> PRT

<213> Triticum aestivum

<400> 28

Met	Lys	Met	Ser	Pro	Glu	Arg	Lys	Gly	Ala	Glu	Asp	Lys	Glu	Glu	Gly
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Ser	Arg	Met	Ala	Ser	Ala	Ala	Leu	Pro	Glu	Pro	Gly	Ala	Val	His	Pro
	20						25					30			

Arg	Asn	Lys	Gly	Asn	Phe	Lys	Tyr	Ala	Phe	Thr	Cys	Ala	Leu	Cys	Ala
35					40						45				

Ser	Met	Ala	Thr	Ile	Val	Leu	Gly	Tyr	Asp	Val	Gly	Val	Met	Ser	Gly
50					55					60					

Ala	Ser	Leu	Tyr	Ile	Lys	Arg	Asp	Leu	Gln	Ile	Thr	Asp	Val	Gln	Leu
65					70				75				80		

Glu	Ile	Met	Met	Gly	Ile	Leu	Ser	Val	Tyr	Ala	Leu	Ile	Gly	Ser	Phe
	85					90						95			

Leu	Gly	Ala	Arg	Thr	Ser	Asp	Trp	Val	Gly	Arg	Arg	Val	Thr	Val	Val
100						105					110				

Phe	Ala	Ala	Ala	Ile	Phe	Asn	Asn	Gly	Ser	Leu	Leu	Met	Gly	Phe	Ala
115						120					125				

Val	Asn	Tyr	Ala	Met	Leu	Met	Val	Gly	Arg	Phe	Val	Thr	Gly	Ile	Gly
130						135					140				

Val	Gly	Tyr	Ala	Ile	Met	Val	Ala	Pro	Val	Tyr	Thr	Pro	Glu	Val	Ser
145						150			155				160		

Pro	Ala	Ser	Ala	Arg	Gly	Phe	Leu	Thr	Ser	Phe	Thr	Glu	Val	Phe	Ile
165							170					175			

Asn	Val	Gly	Ile	Leu	Leu	Gly	Tyr	Val	Ser	Asn	Tyr	Ala	Phe	Ala	Arg
180						185						190			

Leu	Pro	Leu	His	Leu	Ser	Trp	Arg	Val	Met	Leu	Gly	Ile	Gly	Ala	Val
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10051909 Sequence Listing.txt

195

200

205

Pro Ser Ala Leu Leu Ala Leu Met Val Phe Gly Met Pro Glu Ser Pro
 210 215 220
 Arg Trp Leu Val Met Lys Gly Arg Leu Ala Asp Ala Arg Ala Val Leu
 225 230 235 240
 Ala Lys Thr Ser Asp Thr Pro Glu Glu Ala Val Glu Arg Leu Asp Gln
 245 250 255
 Ile Lys Ala Ala Ala Gly Ile Pro Arg Glu Leu Asp Gly Asp Val Val
 260 265 270
 Val Met Pro Lys Thr Lys Gly Gly Gln Glu Lys Gln Val Trp Lys Glu
 275 280 285
 Leu Ile Phe Ser Pro Thr Pro Ala Met Arg Arg Ile Leu Leu Ala Ala
 290 295 300
 Leu Gly Ile His Phe Phe Gln Gln Ala Thr Gly Ser Asp Ser Val Val
 305 310 315 320
 Leu Tyr Ser Pro Arg Val Phe Gln Ser Ala Gly Ile Thr Gly Asp Asn
 325 330 335
 His Leu Leu Gly Ala Thr Cys Ala Met Gly Val Met Lys Thr Leu Phe
 340 345 350
 Ile Leu Val Ala Thr Phe Gln Leu Asp Arg Val Gly Arg Arg Pro Leu
 355 360 365
 Leu Leu Thr Ser Thr Ala Gly Met Leu Ala Cys Leu Ile Gly Leu Gly
 370 375 380
 Thr Gly Leu Thr Val Val Gly Arg His Pro Asp Ala Lys Val Pro Trp
 385 390 395 400
 Ala Ile Gly Leu Cys Ile Val Ser Ile Leu Ala Tyr Val Ser Phe Phe
 405 410 415
 Ser Ile Gly Leu Gly Pro Leu Thr Ser Val Tyr Thr Ser Glu Val Phe
 420 425 430
 Pro Leu Arg Val Arg Ala Leu Gly Phe Ala Leu Gly Thr Ser Cys Asn
 435 440 445
 Arg Val Thr Ser Ala Ala Val Ser Met Ser Phe Leu Ser Leu Ser Lys
 450 455 460
 Ala Ile Thr Ile Gly Gly Ser Phe Phe Leu Tyr Ala Gly Ile Ala Ala
 465 470 475 480
 Ile Gly Trp Ile Phe Phe Thr Phe Ile Pro Glu Thr Arg Gly Leu
 485 490 495
 Pro Leu Glu Glu Ile Gly Lys Leu Phe Gly Met Thr Asp Thr Ala Val
 500 505 510
 Glu Ala Gln Asp Thr Ala Thr Lys Asp Lys Ala Lys Val Gly Glu Met
 515 520 525

Asn

10051909 Sequence Listing.txt

<210> 29
<211> 729
<212> PRT
<213> *Arabidopsis thaliana*

<400> 29
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Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
20 25 30

Lys Lys Glu Phe Asn Leu Glu Ser Asn Pro Ser Val Glu Gly Leu Ile
35 40 45

Val Ala Met Ser Leu Ile Gly Ala Thr Leu Ile Thr Thr Cys Ser Gly
50 55 60

Gly Val Ala Asp Trp Leu Gly Arg Arg Pro Met Leu Ile Leu Ser Ser
65 70 75 80

Ile Leu Tyr Phe Val Gly Ser Leu Val Met Leu Trp Ser Pro Asn Val
85 90 95

Tyr Val Leu Leu Leu Gly Arg Leu Leu Asp Gly Phe Gly Val Gly Leu
100 105 110

Val Val Thr Leu Val Pro Ile Tyr Ile Ser Glu Thr Ala Pro Pro Glu
115 120 125

Ile Arg Gly Leu Leu Asn Thr Leu Pro Gln Phe Thr Gly Ser Gly Gly
130 135 140

Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met Pro Ser
145 150 155 160

Pro Ser Trp Arg Leu Met Leu Gly Val Leu Phe Ile Pro Ser Leu Val
165 170 175

Phe Phe Phe Leu Thr Val Phe Phe Leu Pro Glu Ser Pro Arg Trp Leu
180 185 190

Val Ser Lys Gly Arg Met Leu Glu Ala Lys Arg Val Leu Gln Arg Leu
195 200 205

Arg Gly Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly
210 215 220

Leu Gly Ile Gly Gly Glu Thr Thr Ile Glu Glu Tyr Ile Ile Gly Pro
225 230 235 240

Ala Asp Glu Val Thr Asp Asp His Asp Ile Ala Val Asp Lys Asp Gln
245 250 255

Ile Lys Leu Tyr Gly Ala Glu Glu Gly Leu Ser Trp Val Ala Arg Pro
260 265 270

Val Lys Gly Gly Ser Thr Met Ser Val Leu Ser Arg His Gly Ser Thr
275 280 285

Met Ser Arg Arg Gln Gly Ser Leu Ile Asp Pro Leu Val Thr Leu Phe

10051909 Sequence Listing.txt
290 295 300

Gly Ser Val His Glu Lys Met Pro Asp Thr Gly Ser Met Arg Ser Ala
305 310 315 320
Leu Phe Pro His Phe Gly Ser Met Phe Ser Val Gly Gly Asn Gln Pro
325 330 335
Arg His Glu Asp Trp Asp Glu Glu Asn Leu Val Gly Glu Gly Glu Asp
340 345 350
Tyr Pro Ser Asp His Gly Asp Asp Ser Glu Asp Asp Leu His Ser Pro
355 360 365
Leu Ile Ser Arg Gln Thr Thr Ser Met Glu Lys Asp Met Pro His Thr
370 375 380
Ala His Gly Thr Leu Ser Thr Phe Arg His Gly Ser Gln Val Gln Gly
385 390 395 400
Ala Gln Gly Glu Gly Ala Gly Ser Met Gly Ile Gly Gly Trp Gln
405 410 415
Val Ala Trp Lys Trp Thr Glu Arg Glu Asp Glu Ser Gly Gln Lys Glu
420 425 430
Glu Gly Phe Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu Pro Gly
435 440 445
Gly Asp Gly Thr Gly Glu Ala Asp Phe Val Gln Ala Ser Ala Leu Val
450 455 460
Ser Gln Pro Ala Leu Tyr Ser Lys Asp Leu Leu Lys Glu His Thr Ile
465 470 475 480
Gly Pro Ala Met Val His Pro Ser Glu Thr Thr Lys Gly Ser Ile Trp
485 490 495
His Asp Leu His Asp Pro Gly Val Lys Arg Ala Leu Val Val Gly Val
500 505 510
Gly Leu Gln Ile Leu Gln Gln Phe Ser Gly Ile Asn Gly Val Leu Tyr
515 520 525
Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Gly Ile Leu Leu Ser
530 535 540
Asn Met Gly Ile Ser Ser Ser Ala Ser Leu Leu Ile Ser Ala Leu
545 550 555 560
Thr Thr Phe Val Met Leu Pro Ala Ile Ala Val Ala Met Arg Leu Met
565 570 575
Asp Leu Ser Gly Arg Arg Thr Leu Leu Leu Thr Thr Ile Pro Ile Leu
580 585 590
Ile Ala Ser Leu Leu Val Leu Val Ile Ser Asn Leu Val His Met Asn
595 600 605
Ser Ile Val His Ala Val Leu Ser Thr Val Ser Val Val Leu Tyr Phe
610 615 620
Cys Phe Phe Val Met Gly Phe Gly Pro Ala Pro Asn Ile Leu Cys Ser

10051909 Sequence Listing.txt

625	630	635	640
Glu Ile Phe Pro Thr Arg Val Arg Gly Ile Cys Ile Ala Ile Cys Ala			
645	650	655	
Leu Thr Phe Trp Ile Cys Asp Ile Ile Val Thr Tyr Ser Leu Pro Val			
660	665	670	
Leu Leu Lys Ser Ile Gly Leu Ala Gly Val Phe Gly Met Tyr Ala Ile			
675	680	685	
Val Cys Cys Ile Ser Trp Val Phe Val Phe Ile Lys Val Pro Glu Thr			
690	695	700	
Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala			
705	710	715	720
Arg Gln Ala Glu Ala Ala Lys Asn Glu			
725			

<210> 30
<211> 549
<212> PRT
<213> Beta vulgaris

<400> 30						
Met Ser Glu Gly Thr Asn Lys Ala Met Ser Asp Pro Pro Pro Thr Thr						
1	5	10	15			
Ala Ser Lys Val Ile Ala Asp Phe Asp Pro Leu Lys Lys Pro Pro Lys						
20	25	30				
Arg Asn Lys Phe Ala Phe Ala Cys Ala Thr Leu Ala Ser Met Thr Ser						
35	40	45				
Val Leu Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ile Ile Tyr						
50	55	60				
Leu Lys Glu Asp Trp His Ile Ser Asp Thr Gln Ile Gly Val Leu Val						
65	70	75	80			
Gly Ile Leu Asn Ile Tyr Cys Leu Phe Gly Ser Phe Ala Ala Gly Arg						
85	90	95				
Thr Ser Asp Trp Ile Gly Arg Arg Tyr Thr Ile Val Leu Ala Gly Ala						
100	105	110				
Ile Phe Phe Val Gly Ala Leu Leu Met Gly Phe Ala Thr Asn Tyr Ala						
115	120	125				
Phe Leu Met Val Gly Arg Phe Val Thr Gly Ile Gly Val Gly Tyr Ala						
130	135	140				
Leu Met Ile Ala Pro Val Tyr Thr Ala Glu Val Ser Pro Ala Ser Ser						
145	150	155	160			
Arg Gly Phe Leu Thr Ser Phe Pro Glu Val Phe Ile Asn Ala Gly Ile						
165	170	175				
Leu Leu Gly Tyr Ile Ser Asn Leu Ala Phe Ser Ser Leu Pro Thr His						
180	185	190				
Leu Ser Trp Arg Phe Met Leu Gly Ile Gly Ala Ile Pro Ser Ile Phe						

10051909 Sequence Listing.txt
195 200 205

Leu Ala Ile Gly Val Leu Ala Met Pro Glu Ser Pro Arg Trp Leu Val
210 215 220
Met Gln Gly Arg Leu Gly Asp Ala Lys Lys Val Leu Asn Arg Ile Ser
225 230 235 240
Asp Ser Pro Glu Glu Ala Gln Leu Arg Leu Ser Glu Ile Lys Gln Thr
245 250 255
Ala Gly Ile Pro Ala Glu Cys Asp Glu Asp Ile Tyr Lys Val Glu Lys
260 265 270
Thr Lys Ile Lys Ser Gly Asn Ala Val Trp Lys Glu Leu Phe Phe Asn
275 280 285
Pro Thr Pro Ala Val Arg Arg Ala Val Ile Ala Gly Ile Gly Ile His
290 295 300
Phe Phe Gln Gln Ala Ser Gly Ile Asp Ala Val Val Leu Tyr Ser Pro
305 310 315 320
Arg Ile Phe Gln Ser Ala Gly Ile Thr Asn Ala Arg Lys Gln Leu Leu
325 330 335
Ala Thr Val Ala Val Gly Val Val Lys Thr Leu Phe Ile Leu Val Ala
340 345 350
Thr Phe Gln Leu Asp Lys Tyr Gly Arg Arg Pro Leu Leu Leu Thr Ser
355 360 365
Val Gly Gly Met Ile Ile Ala Ile Leu Thr Leu Ala Met Ser Leu Thr
370 375 380
Val Ile Asp His Ser His His Lys Ile Thr Trp Ala Ile Ala Leu Cys
385 390 395 400
Ile Thr Met Val Cys Ala Val Val Ala Ser Phe Ser Ile Gly Leu Gly
405 410 415
Pro Ile Thr Trp Val Tyr Ser Ser Glu Val Phe Pro Leu Arg Leu Arg
420 425 430
Ala Gln Gly Thr Ser Met Gly Val Ala Val Asn Arg Val Val Ser Gly
435 440 445
Val Ile Ser Ile Phe Phe Leu Pro Leu Ser His Lys Ile Thr Thr Gly
450 455 460
Gly Ala Phe Phe Leu Phe Gly Gly Ile Ala Ile Ile Ala Trp Phe Phe
465 470 475 480
Phe Leu Thr Phe Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu Asn Met
485 490 495
His Glu Leu Phe Glu Asp Phe Arg Trp Arg Glu Ser Phe Pro Gly Asn
500 505 510
Lys Ser Asn Asn Asp Glu Asn Ser Thr Arg Lys Gln Ser Asn Gly Asn
515 520 525
Asp Lys Ser Gln Val Gln Leu Gly Glu Thr Thr Ser Thr Thr Val

530

535

540

Thr Asn Asp Asn His
545

<210> 31

<211> 2777

<212> DNA

<213> Zea mays

<400> 31

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ctgcttcgt	ttcttcacag	gagccggta	cctcgacga	tatcttggag	gacaagatgt	180
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tctccggcc	attatcagac	tcgattggcc	gacgcccatt	gcttattctc	tcttcaattc	420
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taatgttcc	ttgcatttgg	tttgcattc	tgcttattg	tcttccgg	agaagggttt	1980
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caaccagggt	tcgtggccct	tgtatttgc	tttgcctt	tacattctgg	atcggagata	2220
tcatcg	ctacaggcct	cctgtatgc	tgaatgtat	tggactggcg	gtgttttca	2280
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tttgcatttgc	tttgcatttgc	tttatttgc	tttttttttgc	tttttttttgc	tttttttttgc	2520
gaacgaacat	tttgcatttgc	tttatttgc	tttttttttgc	tttttttttgc	tttttttttgc	2580
agtcgtttaag	tttgcatttgc	tttatttgc	tttttttttgc	tttttttttgc	tttttttttgc	2640
tcaagcttatt	tttgcatttgc	tttatttgc	tttttttttgc	tttttttttgc	tttttttttgc	2700
atctgtatgtt	tttgcatttgc	tttatttgc	tttttttttgc	tttttttttgc	tttttttttgc	2760
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	2777

<210> 32
<211> 800

10051909 Sequence Listing.txt

<212> PRT
 <213> Zea mays

<400> 32
 Ile Arg Ser Gly Ser Trp Leu Ala Val Gln Thr Pro Phe Thr Pro Asp
 1 5 10 15
 Leu Asp Arg Arg Glu Arg Leu Leu Pro Ser Val Val Leu Ala Leu Pro
 20 25 30
 Gly Pro Leu Pro Pro Ala Ser Cys Ser Ser Gln Glu Pro Val Thr Ser
 35 40 45
 Asp Asp Ile Leu Glu Asp Lys Met Ser Gly Ala Val Leu Val Ala Ile
 50 55 60
 Val Ala Ser Ile Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile
 65 70 75 80
 Ala Ala Ala Val Leu Tyr Ile Lys Lys Glu Phe Gln Leu Gln Asn Glu
 85 90 95
 Pro Thr Val Glu Gly Leu Ile Val Ser Met Ser Leu Ile Gly Ala Thr
 100 105 110
 Ile Val Thr Thr Phe Ser Gly Pro Leu Ser Asp Ser Ile Gly Arg Arg
 115 120 125
 Pro Met Leu Ile Leu Ser Ser Ile Leu Tyr Phe Phe Ser Gly Leu Ile
 130 135 140
 Met Leu Trp Ser Pro Asn Val Tyr Val Leu Leu Leu Ala Arg Phe Val
 145 150 155 160
 Asp Gly Phe Gly Ile Gly Leu Ala Val Thr Leu Val Pro Leu Tyr Ile
 165 170 175
 Ser Glu Ile Ala Pro Ser Glu Ile Arg Gly Leu Leu Asn Thr Leu Pro
 180 185 190
 Gln Phe Ser Gly Ser Gly Gly Met Phe Leu Ser Tyr Cys Met Val Phe
 195 200 205
 Gly Met Ser Leu Ser Pro Ser Pro Asp Trp Arg Ile Met Leu Gly Val
 210 215 220
 Leu Ala Ile Pro Ser Leu Phe Phe Gly Leu Thr Ile Phe Tyr Leu
 225 230 235 240
 Pro Glu Ser Pro Arg Trp Leu Val Ser Lys Gly Arg Met Ala Glu Ala
 245 250 255
 Lys Lys Val Leu Gln Lys Leu Arg Gly Lys Asp Asp Val Ser Gly Glu
 260 265 270
 Leu Ser Leu Leu Leu Glu Gly Leu Glu Val Gly Gly Asp Thr Ser Ile
 275 280 285
 Glu Glu Tyr Ile Ile Gly Pro Ala Thr Glu Ala Ala Asp Asp Leu Val
 290 295 300
 Thr Asp Gly Asp Lys Glu Gln Ile Thr Leu Tyr Gly Pro Glu Glu Gly
 305 310 315 320

10051909 Sequence Listing.txt

Gln Ser Trp Ile Ala Arg Pro Ser Lys Gly Pro Ile Met Leu Gly Ser
325 330 335

Val Leu Ser Leu Ala Ser Arg His Gly Ser Met Val Asn Gln Ser Val
340 345 350

Pro Leu Met Asp Pro Ile Val Thr Leu Phe Gly Ser Val His Glu Asn
355 360 365

Met Pro Gln Ala Gly Gly Ser Met Arg Ser Thr Leu Phe Pro Asn Phe
370 375 380

Gly Ser Met Phe Ser Val Thr Asp Gln His Ala Lys Asn Glu Gln Trp
385 390 395 400

Asp Glu Glu Asn Leu His Arg Asp Asp Glu Glu Tyr Ala Ser Asp Gly
405 410 415

Ala Gly Gly Asp Tyr Glu Asp Asn Leu His Ser Pro Leu Leu Ser Arg
420 425 430

Gln Ala Thr Gly Ala Glu Gly Lys Asp Ile Val His His Gly His Arg
435 440 445

Gly Ser Ala Leu Ser Met Arg Arg Gln Thr Leu Leu Gly Glu Gly Gly
450 455 460

Asp Gly Val Ser Ser Thr Asp Ile Gly Gly Gly Trp Gln Leu Ala Trp
465 470 475 480

Lys Trp Ser Glu Lys Glu Gly Glu Asn Gly Arg Lys Glu Gly Gly Phe
485 490 495

Lys Arg Val Tyr Leu His Gln Glu Gly Val Pro Gly Ser Arg Arg Gly
500 505 510

Ser Ile Val Ser Leu Pro Gly Gly Asp Val Phe Glu Gly Ser Glu
515 520 525

Phe Val His Ala Ala Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys
530 535 540

Gly Leu Ala Glu Pro Arg Met Ser Asp Ala Ala Met Val His Pro Ser
545 550 555 560

Glu Val Ala Ala Lys Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly
565 570 575

Val Arg Arg Ala Leu Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln
580 585 590

Phe Ala Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu
595 600 605

Gln Ala Gly Val Ala Val Ile Leu Ser Lys Phe Gly Leu Ser Ser Ala
610 615 620

Ser Ala Ser Ile Leu Ile Ser Ser Leu Thr Thr Leu Leu Met Leu Pro
625 630 635 640

Cys Ile Gly Phe Ala Met Leu Leu Met Asp Leu Ser Gly Arg Arg Phe
645 650 655

10051909 Sequence Listing.txt

Leu	Leu	Leu	Gly	Thr	Ile	Pro	Ile	Leu	Ile	Ala	Ser	Leu	Val	Ile	Leu
660								665						670	
Val	Val	Ser	Asn	Leu	Ile	Asp	Leu	Gly	Thr	Leu	Ala	His	Ala	Leu	Leu
675							680						685		
Ser	Thr	Val	Ser	Val	Ile	Val	Tyr	Phe	Cys	Cys	Phe	Val	Met	Gly	Phe
690						695					700				
Gly	Pro	Ile	Pro	Asn	Ile	Leu	Cys	Ala	Glu	Ile	Phe	Pro	Thr	Arg	Val
705					710				715						720
Arg	Gly	Leu	Cys	Ile	Ala	Ile	Cys	Ala	Phe	Thr	Phe	Trp	Ile	Gly	Asp
				725					730						735
Ile	Ile	Val	Thr	Tyr	Ser	Leu	Pro	Val	Met	Leu	Asn	Ala	Ile	Gly	Leu
								745							750
Ala	Gly	Val	Phe	Ser	Ile	Tyr	Ala	Val	Val	Cys	Leu	Ile	Ser	Phe	Val
							760						765		
Phe	Val	Phe	Leu	Lys	Val	Pro	Glu	Thr	Lys	Gly	Met	Pro	Leu	Glu	Val
						775					780				
Ile	Thr	Glu	Phe	Phe	Ala	Val	Gly	Ala	Lys	Gln	Ala	Ala	Ala	Lys	Ala
						790					795				800

<210> 33
<211> 2063
<212> DNA
<213> Zea mays

<400> 33	gtgttgttaag	cctactaaaa	tttgctgtta	ttgatTTTT	gacccttca	tttcatcagg	60
	tgcacgcgtc	gatgtcgTT	ccagcacgga	acaatcacca	ccgttattaa	gaagatgatg	120
	cgctgcgtg	caacgggCGG	cgggtgcgtc	gcttcgtgga	gcggcgatcg	gagattgccc	180
	gcggtaacc	cctgcagcgt	gcggatGCC	acgggcaacg	atgggtggtg	cgccggcctg	240
	aggtcgcggg	cggcggatct	cgcgggcctc	gagatggcca	acctgcgcgg	cggcgtcggg	300
	gggcttcc	gcmcagcccc	gctactacggg	cgttgcgaag	ccacggcggc	agttgaccct	360
	gaagatattc	cattggagaa	ggttcaagtt	aaatcctca	gacatgttct	ccatatgtt	420
	ggcgttgcTT	gttgggggg	tattctgtt	ggtttaccatc	ttgggtgtgt	caatggcga	480
	cttgcataatc	tcgcgaaggaa	tcttgggatt	gctgaaaatag	ctgtcttgc	gggggtgggt	540
	gttagcacat	ccttggctgg	tgcaacacta	ggttcttttta	ctgggggttc	tttggcagat	600
	aaatttgggc	ggacaagaac	attcatcctg	gatgcagtcc	cacttgctct	aggtgcattc	660
	ttgagtgcAA	cagctcaaga	tatccgcaca	atgattattt	gccgatttgc	tgctggatt	720
	ggtatcgGGG	tctcatctgc	tcttgcaccc	ctttacatat	ctgagatctc	accaactgaa	780
	attcgtggaa	cacttggtac	cgttaatcaa	cttttattt	gcatttggaa	tcttgcagct	840
	ttgttagctg	gattgcctct	ggcagggaaat	cctgcctgg	ggaggacaat	gtttggatt	900
	gctgttagttc	cattcattct	gctggctgta	ggaatggcct	tttcgcctga	aagccctcg	960
	tggctattcc	agcaaggaaa	ggttactcaa	gcagaattag	ctgtaaaaag	actgtatgga	1020
	aaagaaatgg	ttaccgaaat	tatgtttgat	ctgagagacta	gtggccaaag	ttcttcggag	1080
	tccgaagccc	gctgggttga	tcttttcagc	aagcgttact	ggaaagtgt	gagtgtgggg	1140
	gcagcactgt	ttttgttcca	gcagcttgct	ggtataaaacg	ctgttgata	ttactctaca	1200
	tcgggtgtcc	gtatgtcagg	cattgcatct	gatgttgcgt	ctagtgctct	ttttggagca	1260
	gccaatgttt	tttgtactat	ggttgcac	tctcaatgg	acaaacaagg	aggaaaaagc	1320
	cttgcataaa	caagctttc	tggaaatgg	gcttcataatgc	tactcctagc	attgtccttc	1380
	acctggaaag	ctctggcacc	tattctgtt	actcttgct	ttgttggcac	tgttctgtac	1440
	gtgctgtcat	ttgtcttagg	agcggggccct	gttccagcgc	tacttttcc	tgaaatattt	1500
	gcctcgagaa	taagggccaa	ggctgtcgca	ttatctctag	gcatgcactg	ggtatcta	1560
	tttttcattt	gcctgtactt	cctgagtgtc	gtgagcaagt	ttgggatcag	caacgtgtat	1620
	ctqqqatttq	catcaqtatq	tqcccctqca	gttctqtaca	tagctqqqaa	tgtqgtc	1680

10051909 Sequence Listing.txt

accaagggga gatcacttga agagattgaa agggagctaa gtgttagcaga atgatgtact 1740
 tttgctagtc atgctgtggc gccgtttgg ttatcgagaa tgcaaccaag cgctcaaccg 1800
 agcatccctg gacctggaga ctctttctag tttcatgtag ttttagaaat aagcgaacgg 1860
 caagagtacc aatcttaggt gacttgggtg gggttgtgtc tgaaataagt gaattggatt 1920
 gtagaatttc agaaataagt gaattggatt gtagaatttc aaaaagtgtg ttcccctaa 1980
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2040
 aaaaaaaaaa aaaaaaaaaa aaa 2063

<210> 34

<211> 571

<212> PRT

<213> Zea mays

<400> 34

Asn Leu Leu Leu Leu Ile Phe Gly Pro Phe His Phe Ile Arg Cys Thr
 1 5 10 15Arg Arg Cys Arg Cys Gln His Gly Thr Ile Thr Thr Val Ile Lys Lys
 20 25 30Met Met Arg Cys Ala Ala Thr Gly Gly Cys Val Ala Ser Trp Ser
 35 40 45Gly Asp Arg Arg Leu Pro Ala Val Asn Pro Cys Ser Val Arg Met Pro
 50 55 60Thr Gly Asn Asp Gly Trp Cys Ala Gly Leu Arg Ser Arg Ala Ala Asp
 65 70 75 80Leu Ala Gly Leu Glu Met Ala Asn Leu Arg Gly Gly Val Gly Leu
 85 90 95Phe Arg Ala Ser Pro Arg Tyr Gly Arg Leu Gln Ala Thr Ala Ala Val
 100 105 110Asp Pro Glu Asp Ile Pro Leu Glu Lys Val Gln Val Lys Ser Ser Gly
 115 120 125His Val Leu Pro Tyr Val Gly Val Ala Cys Leu Gly Ala Ile Leu Phe
 130 135 140Gly Tyr His Leu Gly Val Val Asn Gly Ala Leu Glu Tyr Leu Ala Lys
 145 150 155 160Asp Leu Gly Ile Ala Glu Asn Ala Val Leu Gln Gly Trp Val Val Ser
 165 170 175Thr Ser Leu Ala Gly Ala Thr Leu Gly Ser Phe Thr Gly Gly Ser Leu
 180 185 190Ala Asp Lys Phe Gly Arg Thr Arg Thr Phe Ile Leu Asp Ala Val Pro
 195 200 205Leu Ala Leu Gly Ala Phe Leu Ser Ala Thr Ala Gln Asp Ile Arg Thr
 210 215 220Met Ile Ile Gly Arg Leu Leu Ala Gly Ile Gly Ile Gly Val Ser Ser
 225 230 235 240Ala Leu Val Pro Leu Tyr Ile Ser Glu Ile Ser Pro Thr Glu Ile Arg
 245 250 255

10051909 Sequence Listing.txt

Gly Thr Leu Gly Thr Val Asn Gln Leu Phe Ile Cys Ile Gly Ile Leu
 260 265 270
 Ala Ala Leu Leu Ala Gly Leu Pro Leu Ala Gly Asn Pro Ala Trp Trp
 275 280 285
 Arg Thr Met Phe Gly Ile Ala Val Val Pro Ser Ile Leu Leu Ala Val
 290 295 300
 Gly Met Ala Phe Ser Pro Glu Ser Pro Arg Trp Leu Phe Gln Gln Gly
 305 310 315 320
 Lys Val Thr Gln Ala Glu Leu Ala Val Lys Arg Leu Tyr Gly Lys Glu
 325 330 335
 Met Val Thr Glu Ile Met Phe Asp Leu Arg Ala Ser Gly Gln Ser Ser
 340 345 350
 Ser Glu Ser Glu Ala Gly Trp Phe Asp Leu Phe Ser Lys Arg Tyr Trp
 355 360 365
 Lys Val Val Ser Val Gly Ala Ala Leu Phe Leu Phe Gln Gln Leu Ala
 370 375 380
 Gly Ile Asn Ala Val Val Tyr Tyr Ser Thr Ser Val Phe Arg Ser Ala
 385 390 395 400
 Gly Ile Ala Ser Asp Val Ala Ala Ser Ala Leu Val Gly Ala Ala Asn
 405 410 415
 Val Phe Gly Thr Met Val Ala Ser Ser Leu Met Asp Lys Gln Gly Arg
 420 425 430
 Lys Ser Leu Leu Ile Thr Ser Phe Ser Gly Met Gly Ala Ser Met Leu
 435 440 445
 Leu Leu Ala Leu Ser Phe Thr Trp Lys Ala Leu Ala Pro Tyr Ser Gly
 450 455 460
 Thr Leu Ala Val Val Gly Thr Val Leu Tyr Val Leu Ser Phe Ala Leu
 465 470 475 480
 Gly Ala Gly Pro Val Pro Ala Leu Leu Leu Pro Glu Ile Phe Ala Ser
 485 490 495
 Arg Ile Arg Ala Lys Ala Val Ala Leu Ser Leu Gly Met His Trp Val
 500 505 510
 Ser Asn Phe Phe Ile Gly Leu Tyr Phe Leu Ser Val Val Ser Lys Phe
 515 520 525
 Gly Ile Ser Asn Val Tyr Leu Gly Phe Ala Ser Val Cys Ala Leu Ala
 530 535 540
 Val Leu Tyr Ile Ala Gly Asn Val Val Glu Thr Lys Gly Arg Ser Leu
 545 550 555 560
 Glu Glu Ile Glu Arg Glu Leu Ser Val Ala Glu
 565 570

<210> 35
 <211> 1953

10051909 Sequence Listing.txt

<212> DNA
 <213> Zea mays

<220>
 <221> unsure
 <222> (1584)
 <223> n = A, C, G or T

<400> 35

ccttcctcct	cgccctcctt	caggccagcg	ggcaagaaga	agaagaagaa	aaatcaaggc	60
ttgcggcgag	aggctgtgcc	cggccgaccg	gcgagcagc	ttcgatcgcg	cgtcatgggt	120
ggccggcagca	acagaggcg	cgccggcgcc	ggcgaggaga	gcggcagcga	ccacgacggt	180
gtgtcgcgga	ggccgctgc	caacacgggg	agctggtacc	ggatgagctc	gcggcagtcc	240
agtttgccc	cggggacctc	ctccatggcc	gtcctgcgcg	agtcccacgt	ctccgccttc	300
ctctgcacgc	tcatcgctgc	gctcgcccc	atccagttcg	gcttcaccag	cggcttcctcc	360
tccccgaccc	aggacgccc	gttccggac	ctcaaccctc	ctatctccga	gttctcggcg	420
ttcggatcgc	tgtccaacgt	cggcggcatg	gtcggggcga	tcgcacgcgg	gcagatggcc	480
gagtacattg	gccgtaaagg	gtcgttgatg	attgctgca	tcccaaata	catcggttgg	540
cttgcgtatct	ccttgcaaa	agatgcctca	tttctatata	tggacgatt	gcttgaaggg	600
tttgggtgtcg	gcatcatatc	ctacacggta	ccggtataca	tagcagagat	atctcctcag	660
aacatgaggg	gagcttctgg	ttctgtgaac	cagttgtctg	tgacccttgg	catattcttgc	720
gcctatttgc	tcggcatgtt	tattcttgg	agacttctg	ctgtgttgg	agccttggcc	780
tgcacaatgt	tgattcctgg	actattcttc	attccagaat	ctcccgatgt	gctggcaaaag	840
atgaatttga	cggaaagattt	tgagacgtcc	ctacaagtgc	tgaggggggtt	tgagactgac	900
atcacaacac	aagtgaatgt	tataaaagagg	gcagtggcat	catcaagtaa	gaggaccaca	960
atcaggtttc	aagaattaaa	ccaaaagaaa	tacccgcacgc	cactacttct	agggatttgc	1020
ctacttgtac	tgcaaaatct	tagtggaaatc	aacgggttac	tgttttatgc	aagtagcatc	1080
ttcaaaagctg	cagggttac	aaacagcgac	ttggccaccc	gttcaacttgg	tgctattcag	1140
gtccttgcta	ctggagttac	aacatggctg	ttagaccgag	ctggacgcacg	catccttctc	1200
attatttcta	cctctggcat	gactctatgc	cttcttgcgc	tttctgttgt	attttttctc	1260
aaggataaca	tttcacagga	ttcttaactca	tactacatct	taacaatgtat	ctcccttgtt	1320
ggtatttgtt	cttttgtcat	tacccctctcg	tttggtatgg	gtgccattcc	atggctcatg	1380
atgtctgaga	tcctcccggt	tagcatcaag	agccttggcg	gaagcatcgc	aacactggcc	1440
aactggctga	catccttcgc	cataacaatg	acgacgaact	tgatgctcac	gtggagtgtt	1500
ggaggcactt	ttctctcgta	catgggtgt	agcgccttca	ccatcggttt	tgttgtcctt	1560
tgggtgcccc	agacgaaggg	gagnaactct	agaggagata	caattttcgt	ttcgctgagc	1620
attcagcgtc	agctgcaatg	tttgcccgag	tgttttatctt	agggcctgtt	tcgatcccat	1680
gagctaaagc	aaaagaagc	taaaatttag	tcactttata	aactaaagtt	ccaatcagga	1740
ggagctaaaa	gtgaataaaa	tagcaaaaga	atatcttta	gtcactttta	gcttctaaag	1800
aggagctaga	atttagtccc	ttgttttagc	ttatactcct	tccatcctaa	aaaaatata	1860
gtcttctaa	cttttctttt	ttctgttcat	attcattcga	ataatgataa	atataagacat	1920
acgtataaac	tattcattaa	aaaaaaaaaa	aaa			1953

<210> 36
 <211> 553
 <212> PRT
 <213> Zea mays

<220>
 <221> UNSURE
 <222> (528)
 <223> Xaa = any amino acid

<400> 36

Pro	Ser	Ser	Ser	Ser	Ser	Phe	Arg	Pro	Ala	Gly	Lys	Lys	Lys	Lys
1						5		10					15	

Lys	Asn	Gln	Gly	Leu	Arg	Arg	Glu	Ala	Val	Pro	Gly	Arg	Pro	Ala	Ser
				20			25				30				

Glu	Leu	Arg	Thr	Arg	Val	Met	Gly	Gly	Gly	Ser	Asn	Arg	Gly	Gly	Ala
				35		40				45					

10051909 Sequence Listing.txt

Gly Ala Gly Glu Glu Ser Gly Ser Asp His Asp Gly Val Leu Arg Arg
50 55 60

Pro Leu Leu Asn Thr Gly Ser Trp Tyr Arg Met Ser Ser Arg Gln Ser
65 70 75 80

Ser Phe Ala Pro Gly Thr Ser Ser Met Ala Val Leu Arg Glu Ser His
85 90 95

Val Ser Ala Phe Leu Cys Thr Leu Ile Val Ala Leu Gly Pro Ile Gln
100 105 110

Phe Gly Phe Thr Ser Gly Phe Ser Ser Pro Thr Gln Asp Ala Met Val
115 120 125

Arg Asp Leu Asn Leu Ser Ile Ser Glu Phe Ser Ala Phe Gly Ser Leu
130 135 140

Ser Asn Val Gly Gly Met Val Gly Ala Ile Ala Ser Gly Gln Met Ala
145 150 155 160

Glu Tyr Ile Gly Arg Lys Gly Ser Leu Met Ile Ala Ala Ile Pro Asn
165 170 175

Ile Ile Gly Trp Leu Ala Ile Ser Phe Ala Lys Asp Ala Ser Phe Leu
180 185 190

Tyr Met Gly Arg Leu Leu Glu Gly Phe Gly Val Gly Ile Ile Ser Tyr
195 200 205

Thr Val Pro Val Tyr Ile Ala Glu Ile Ser Pro Gln Asn Met Arg Gly
210 215 220

Ala Leu Gly Ser Val Asn Gln Leu Ser Val Thr Phe Gly Ile Phe Leu
225 230 235 240

Ala Tyr Leu Leu Gly Met Phe Ile Pro Trp Arg Leu Leu Ala Val Ile
245 250 255

Gly Ala Leu Pro Cys Thr Met Leu Ile Pro Gly Leu Phe Phe Ile Pro
260 265 270

Glu Ser Pro Arg Trp Leu Ala Lys Met Asn Leu Thr Glu Asp Cys Glu
275 280 285

Thr Ser Leu Gln Val Leu Arg Gly Phe Glu Thr Asp Ile Thr Thr Glu
290 295 300

Val Asn Asp Ile Lys Arg Ala Val Ala Ser Ser Ser Lys Arg Thr Thr
305 310 315 320

Ile Ser Phe Gln Glu Leu Asn Gln Lys Lys Tyr Arg Thr Pro Leu Leu
325 330 335

Leu Gly Ile Gly Leu Leu Val Leu Gln Asn Leu Ser Gly Ile Asn Gly
340 345 350

Val Leu Phe Tyr Ala Ser Ser Ile Phe Lys Ala Ala Gly Val Thr Asn
355 360 365

Ser Asp Leu Ala Thr Cys Ser Leu Gly Ala Ile Gln Val Leu Ala Thr
370 375 380

10051909 Sequence Listing.txt

Gly Val Thr Thr Trp Leu Leu Asp Arg Ala Gly Arg Arg Ile Leu Leu
385 390 395 400
Ile Ile Ser Thr Ser Gly Met Thr Leu Cys Leu Leu Ala Val Ser Val
405 410 415
Val Phe Phe Leu Lys Asp Asn Ile Ser Gln Asp Ser Asn Ser Tyr Tyr
420 425 430
Ile Leu Thr Met Ile Ser Leu Val Gly Ile Val Ser Phe Val Ile Thr
435 440 445
Phe Ser Phe Gly Met Gly Ala Ile Pro Trp Leu Met Met Ser Glu Ile
450 455 460
Leu Pro Val Ser Ile Lys Ser Leu Gly Gly Ser Ile Ala Thr Leu Ala
465 470 475 480
Asn Trp Leu Thr Ser Phe Ala Ile Thr Met Thr Thr Asn Leu Met Leu
485 490 495
Thr Trp Ser Val Gly Gly Thr Phe Leu Ser Tyr Met Val Val Ser Ala
500 505 510
Phe Thr Ile Val Phe Val Val Leu Trp Val Pro Glu Thr Lys Gly Xaa
515 520 525
Asn Ser Arg Gly Asp Thr Ile Phe Val Ser Leu Ser Ile Gln Arg Gln
530 535 540
Leu Gln Trp Leu Pro Glu Cys Leu Ser
545 550

<210> 37
<211> 740
<212> PRT
<213> Oryza sativa

<400> 37
Met Ala Gly Ala Val Leu Val Ala Ile Ala Ala Ser Ile Gly Asn Leu
1 5 10 15
Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
20 25 30
Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile
35 40 45
Val Ala Met Ser Leu Ile Gly Ala Thr Ile Ile Thr Thr Phe Ser Gly
50 55 60
Ala Val Ala Asp Ser Phe Gly Arg Arg Pro Met Leu Ile Ala Ser Ala
65 70 75 80
Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Asn Val
85 90 95
Tyr Val Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu
100 105 110
Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro Thr Asp

10051909 Sequence Listing.txt

115

120

125

Ile Arg Gly Leu Leu Asn Thr Leu Pro Gln Phe Ser Gly Ser Gly Gly
 130 135 140

Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met Pro Gln
 145 150 155 160

Pro Asp Trp Arg Ile Met Leu Gly Val Leu Ser Ile Pro Ser Leu Ile
 165 170 175

Tyr Phe Ala Leu Thr Ile Phe Tyr Leu Pro Glu Ser Pro Arg Trp Leu
 180 185 190

Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Leu Gln Gly Leu
 195 200 205

Arg Gly Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly
 210 215 220

Leu Gly Val Gly Lys Asp Thr Lys Ile Glu Glu Tyr Ile Ile Gly Pro
 225 230 235 240

Asp Asp Glu Leu Ala Asp Glu Gly Leu Ala Pro Asp Pro Glu Lys Ile
 245 250 255

Lys Leu Tyr Gly Pro Glu Glu Gly Leu Ser Trp Val Ala Arg Pro Val
 260 265 270

His Gly Gln Ser Ala Leu Gly Ser Ala Leu Gly Leu Ile Ser Arg His
 275 280 285

Gly Ser Met Val Ser Gln Gly Lys Pro Leu Val Asp Pro Val Val Thr
 290 295 300

Leu Phe Gly Ser Val His Glu Lys Met Pro Glu Ile Met Gly Ser Met
 305 310 315 320

Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser Val Ala Glu
 325 330 335

Gln Gln Gln Ala Lys Gly Asp Trp Asp Ala Glu Ser Gln Arg Glu Gly
 340 345 350

Glu Asp Tyr Gly Ser Asp His Gly Gly Asp Asp Ile Glu Asp Ser Leu
 355 360 365

Gln Ser Pro Leu Ile Ser Arg Gln Ala Thr Ser Val Glu Gly Lys Glu
 370 375 380

Ile Ala Ala Pro His Gly Ser Ile Met Gly Ala Val Gly Arg Ser Ser
 385 390 395 400

Ser Leu Met Gln Gly Gly Glu Ala Val Ser Ser Met Gly Ile Gly Gly
 405 410 415

Gly Trp Gln Leu Ala Trp Lys Trp Thr Glu Arg Glu Gly Ala Asp Gly
 420 425 430

Glu Lys Glu Gly Gly Phe Gln Arg Ile Tyr Leu His Glu Glu Gly Val
 435 440 445

Thr Gly Asp Arg Arg Gly Ser Ile Leu Ser Leu Pro Gly Gly Asp Val

10051909 Sequence Listing.txt

450

455

460

Pro Pro Gly Gly Glu Phe Val Gln Ala Ala Ala Leu Val Ser Gln Pro
 465 470 475 480

Ala Leu Tyr Ser Lys Glu Leu Met Glu Gln Arg Leu Ala Gly Pro Ala
 485 490 495

Met Val His Pro Ser Gln Ala Val Ala Lys Gly Pro Lys Trp Ala Asp
 500 505 510

Leu Phe Glu Pro Gly Val Lys His Ala Leu Phe Val Gly Ile Gly Ile
 515 520 525

Gln Ile Leu Gln Gln Phe Ala Gly Ile Asn Gly Val Leu Tyr Tyr Thr
 530 535 540

Pro Gln Ile Leu Glu Gln Ala Gly Val Gly Val Leu Leu Ala Asn Ile
 545 550 555 560

Gly Leu Ser Ser Ser Ala Ser Ile Leu Ile Ser Gly Leu Thr Thr
 565 570 575

Leu Leu Met Leu Pro Ser Ile Gly Ile Ala Met Arg Leu Met Asp Met
 580 585 590

Ser Gly Arg Arg Phe Leu Leu Leu Ala Thr Ile Pro Ile Leu Ile Val
 595 600 605

Ala Leu Ala Ile Leu Ile Leu Val Asn Ile Leu Asp Val Gly Thr Met
 610 615 620

Val His Ala Ser Leu Ser Thr Val Ser Val Ile Leu Tyr Phe Cys Phe
 625 630 635 640

Phe Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile
 645 650 655

Phe Pro Thr Thr Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr
 660 665 670

Phe Trp Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu
 675 680 685

Asn Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys
 690 695 700

Ile Leu Ala Phe Leu Phe Val Phe Met Lys Val Pro Glu Thr Lys Gly
 705 710 715 720

Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln
 725 730 735

Ala Lys Glu Asp
 740

<210> 38
 <211> 501
 <212> PRT
 <213> Oryza sativa

<400> 38

10051909 Sequence Listing.txt

Met Ser Phe Arg Gly Glu Glu Ser Gly Gly Glu Asp Gly Gly Arg Thr
 1 5 10 15

Ala Ser Ala Ser Asp Leu Arg Lys Pro Phe Leu His Thr Gly Ser Trp
 20 25 30

Tyr Lys Met Ser Ser Ala Gly Gly Gly Gly Met Gly Ser Arg Leu
 35 40 45

Gly Ser Ser Ala Tyr Ser Leu Arg Asp Ser Ser Val Ser Ala Val Leu
 50 55 60

Cys Thr Leu Ile Val Ala Leu Gly Pro Ile Gln Phe Gly Phe Thr Cys
 65 70 75 80

Gly Phe Ser Ser Pro Thr Gln Asp Ala Ile Ile Ser Asp Leu Gly Leu
 85 90 95

Thr Leu Ser Glu Phe Ser Leu Phe Gly Ser Leu Ser Asn Val Gly Ala
 100 105 110

Met Val Gly Ala Ile Ala Ser Gly Gln Ile Ala Glu Tyr Ile Gly Arg
 115 120 125

Lys Gly Ser Leu Met Ile Ala Ala Ile Pro Asn Ile Ile Gly Trp Leu
 130 135 140

Ala Ile Ser Phe Ala Lys Asp Ser Ser Phe Leu Phe Met Gly Arg Leu
 145 150 155 160

Leu Glu Gly Phe Gly Val Gly Val Ile Ser Tyr Val Val Pro Val Tyr
 165 170 175

Ile Ala Glu Ile Ala Pro Gln Thr Met Arg Gly Ala Leu Gly Ser Val
 180 185 190

Asn Gln Leu Ser Val Thr Ile Gly Ile Leu Leu Ala Tyr Leu Leu Gly
 195 200 205

Met Phe Val Pro Trp Arg Ile Leu Ser Val Leu Gly Ile Leu Pro Cys
 210 215 220

Ser Ile Leu Ile Pro Gly Leu Phe Phe Ile Pro Gln Ser Pro Arg Trp
 225 230 235 240

Leu Ala Lys Met Gly Lys Met Glu Asp Phe Glu Ser Ser Leu Gln Val
 245 250 255

Leu Arg Gly Phe Glu Thr Asp Ile Ala Val Glu Val Asn Glu Ile Lys
 260 265 270

Arg Ser Val Gln Ser Ser Arg Arg Arg Thr Thr Ile Arg Phe Ala Asp
 275 280 285

Ile Lys Gln Lys Arg Tyr Ser Val Pro Leu Met Val Gly Ile Gly Leu
 290 295 300

Leu Val Leu Gln Gln Leu Ser Gly Val Asn Gly Ile Leu Phe Tyr Ala
 305 310 315 320

Ala Ser Ile Phe Lys Ala Ala Gly Leu Thr Asn Ser Asn Leu Ala Thr
 325 330 335

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Phe Gly Leu Gly Val Val Gln Val Val Ala Thr Gly Val Thr Thr Trp
 340 345 350
 Leu Thr Asp Lys Ala Gly Arg Arg Leu Leu Leu Ile Ile Ser Thr Thr
 355 360 365
 Gly Met Thr Ile Thr Leu Val Val Val Ser Val Ser Phe Phe Val Lys
 370 375 380
 Asp Asn Ile Thr Asn Gly Ser His Leu Tyr Ser Val Met Ser Met Leu
 385 390 395 400
 Ser Leu Val Gly Leu Val Ala Phe Val Ile Ser Phe Ser Leu Gly Leu
 405 410 415
 Gly Ala Ile Pro Trp Ile Ile Met Ser Glu Ile Leu Pro Val Asn Ile
 420 425 430
 Lys Ser Leu Ala Gly Ser Val Ala Thr Leu Ala Asn Trp Leu Thr Ala
 435 440 445
 Trp Leu Ile Thr Met Thr Ala Ser Leu Met Leu Ser Trp Ser Asn Gly
 450 455 460
 Gly Thr Phe Ala Ile Tyr Ala Ala Val Cys Ala Gly Thr Leu Val Phe
 465 470 475 480
 Val Cys Leu Trp Val Pro Glu Thr Lys Gly Arg Thr Leu Glu Glu Ile
 485 490 495
 Ala Phe Ser Phe Arg
 500

<210> 39

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Conserved sequence element disclosed in the sequence alignment of Figure 2.

<400> 39

Pro Glu Ser Pro Arg Trp Leu
 1 5

<210> 40

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<220>

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<222> (4)..(4)

<223> Xaa = any amino acid

10051909 Sequence Listing.txt

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Pro Glu Thr Xaa Gly
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<211> 12

<212> PRT

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<223> Xaa = any amino acid

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<210> 42

<211> 10

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<223> Xaa = any amino acid

<220>

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<222> (7)..(7)

<223> Xaa = any amino acid

<400> 42

Gly Arg Xaa Xaa Xaa Gly Xaa Gly Val Gly
1 5 10

<210> 43

<211> 6

<212> PRT

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<223> Conserved sequence element disclosed in the sequence alignment of Figure 2.

<400> 43

10051909 Sequence Listing.txt

Gly Ile His Phe Phe Gln
1 5

<210> 44
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<400> 44

Phe Ser Xaa Gly Xaa Gly
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<210> 45
<211> 18
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<400> 45

Asp Gly Phe Gly Xaa Gly Leu Xaa Val Thr Leu Val Pro Xaa Tyr Ile
1 5 10 15

Ser Glu

<210> 46
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<222> (9)..(10)
<223> Xaa = any amino acid

<400> 46

Asn Thr Leu Pro Gln Phe Xaa Gly Xaa Xaa Gly Gly Met Phe Leu Ser
1 5 10 15

Tyr Cys Met Val Phe Gly Met Ser Leu
20 25

<210> 47
<211> 10
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<400> 47

Met Leu Gly Val Leu Xaa Ile Pro Ser Leu
1 5 10

<210> 48
<211> 13
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<400> 48

Arg Trp Leu Val Ser Lys Gly Arg Met Xaa Glu Ala Lys
1 5 10

<210> 49
<211> 6
<212> PRT
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Figure 1.

<400> 49

Glu Tyr Ile Ile Gly Pro
1 5

<210> 50
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<400> 50

Asp Pro Xaa Val Thr Leu Phe Gly Ser Xaa His Glu
1 5 10

<210> 51
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Figure 1.

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10051909 Sequence Listing.txt

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<400> 51

Gly Ser Met Arg Ser Xaa Leu Phe Pro Xaa Phe Gly Ser Met Phe Ser
1 5 10 15

<210> 52
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Figure 1.

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<400> 52

Ile Gly Gly Gly Trp Gln Xaa Ala Trp Lys Trp
1 5 10

<210> 53
<211> 23
<212> PRT
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Figure 1.

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<223> Xaa = any amino acid

<220>
<221> misc_feature
<222> (20)..(20)
<223> Xaa = any amino acid

<400> 53

Leu Gln Gln Phe Xaa Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln
1 5 10 15

Ile Leu Glu Xaa Ala Gly Val

<210> 54
<211> 19
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<223> Xaa = any amino acid

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<223> Xaa = any amino acid

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<223> Xaa = any amino acid

<400> 54

Leu Met Asp Xaa Ser Gly Arg Arg Xaa Leu Leu Leu Xaa Thr Ile Pro
1 5 10 15

Xaa Leu Ile

<210> 55
<211> 34
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<223> Xaa = any amino acid

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<220>
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<223> Xaa = any amino acid

<220>
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<222> (24)..(24)
<223> Xaa = any amino acid

<400> 55

Tyr Phe Cys Xaa Phe Val Met Gly Phe Gly Pro Xaa Pro Asn Ile Leu
1 5 10 15

Cys Xaa Glu Ile Phe Pro Thr Xaa Val Arg Gly Leu Cys Ile Ala Ile
20 25 30

Cys Ala

<210> 56
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Figure 1.

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<400> 56

Lys Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile Xaa Glu Phe
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Phe